

Acta Horticulturae et Regiotecturae 2
Nitra, Slovaca Universitas Agriculturae Nitriae, 2015, pp. 35–44

THE CONTRIBUTION OF E. TAQUET, H. SHIRASAWA AND J. UNGER TO THE INTRODUCTION OF WOODY PLANTS TO PRŮHONICE

Ivo TÁBOR

The Institute of Botany of the ASCR, a public research institute, Průhonice, Czech Republic

The activities of the Dendrological Society in Průhonice have significantly influenced the introduction of woody plants into the territory of today's Czech Republic. This is evidenced by a significant handwritten document – The Register of plants of the Dendrological Society that records the introduction period between 1909 and 1924 (10,050 items). The collections of seeds (plants) from E. Taquet, H. Shirasawa and J. Unger played an important role in the introduction of woody plants to Průhonice with over 157 taxa of woody plants from their collections being introduced between 1909 and 1912. From the total number of 157 taxa, 80 items were introduced to Průhonice before anywhere in the Czech lands. This work aims to provide a new knowledge acquired from studying the above-mentioned document, about the time and place of these introductions. A significant part of this work is a detailed overview of the particular woody species introduced to Průhonice.

Keywords: introduction of woody plants, Dendrological Society, Taquet, Shirasawa, Unger

Introduction of woody species is understood here as an intended planting of the specimen of a certain species into a new geographical area with a purpose to enrich the assortment of cultivated native taxa (Machovec 1982). Cultivating exotic plants has been connected with the exploration of foreign countries and continents. Botanical gardens, which in the early days were often features of castle gardens and parks, played a prominent role in this development. Usually, conifers were preferred among introduced ornamental trees. After such a long time period, determination of the first introduction is almost impossible. However, it is an important piece of information in the study of the history and development of the cultivation of exotic species. The first woody species introduced from abroad to Europe was the northern white cedar – *Thuja occidentalis*, from North America in 1536. From Asia, it was maidenhair tree – *Ginkgo biloba*, first introduced in about 1730 from Japan. Among the deciduous species, the first documented introductions were those of the Japanese pagoda tree – *Sophora japonica* to France in 1747 and thence to England in 1753, and of the empress tree – *Paulownia tomentosa* introduced to Paris in 1834.

Introduction of woody species to the Czech lands ensued by the introductions put through in Europe, especially to England, France and Germany. Most of them in the Czech territory were concentrated in castle parks and garden nurseries. The activities of the Dendrological Society in Průhonice, founded by Count Emanuel Silva Tarouca have significantly influenced the introduction of woody plants into the territory of today's Czech Republic. Silva Tarouca has written of the creation of a park in Průhonice in 1909. History of the plant introduction is a part of the history of gardening

and landscape design and is indicative of the advanced level of horticulture at that time. A. M. Svoboda dealt with this topic for the Czech Republic (1976 – coniferous species, 1981 – deciduous species). These works include information on the history of introduction along with the then prevailing situation of the exotic species. There is also included an information about cultivars of the introduced species with particular attention being paid to the Průhonice Park. P. Svoboda (1966, 1967) also dealt with this topic, evaluating the woody species introduced in the Průhonice Park and utilizing all historical documents available at that time. This work also draws from the mentioned contributions. The work of Nožička (1966) is also a significant source and document on introduction that captures the beginnings and development of ornamental gardening in the Czech lands. Additional works used focused on individual sites of interest, e.g., Lednice – Pejchal, Krejčířík (2010, 2012), Tábor (1987, 1991); Orlík – (Tábor 1991); Červený Hrádek – Tábor (1987), Tábor, Šantrůčková (2014).

The plants initially grown in Průhonice came from the Průhonice Park and later from seeds from various botanical gardens and arboreta, e.g., Amsterdam, Arnold Arboretum, Berlin-Dahlem, Edinburgh, Kew, Morton Arboretum, Sofia, Wageningen and others. A considerable amount of woody species was purchased from foreign nurseries (Barbier, Haage Schmidt, Hesse, Regel and Kesselring, Simon-Louis, Veitch and others) or was purchased from or exchanged with the German or the French Dendrological Society. The largest amount came from collections of seeds and plants from nature. Even before the World War I, plants collected during expeditions to the Caucasus regions, China and the eastern Asia were being cultivated in Průhonice. Significant

collectors include E. H. Wilson, C. K. Schneider, G. Forrest, J.A. Purpus, H. Shirasawa, E. Taquet, F. J. Unger, F. W. Kesseling and others. Tábor (2014) evaluated the contribution of the significant collectors and cultivators E. H. Wilson, M. L. Vilmorin and C. S. Sargent to the introduction of woody species to Průhonice.

This work aims to provide new knowledge about the time and place of establishing introduced woody species in our country. This unique register of plants demonstrates the contribution of the collectors Taquet, Shirasawa and Unger, who provided the Dendrological Society with seeds and plants collected in Japan and Korea.

Material and methods

The main focus was on the Dendrological Society's Register of Plants that includes the assortment of plants cultivated in the gardens of the Dendrological Society in Průhonice from 1909 to 1924. This manuscript with the total of 10,050 items has 434 entries for coniferous species, 4,057 deciduous woody species and 5,559 perennials. The header includes the following categories: Entry Number (Laufende Nr.), Latin name of the plant (Lateinischer Name), Origin (Herkunft), Plant Obtained (Als Pflanze erhalten), Day Planted (Tag der Aussaat), Day of Germination (Tag der Keimung), Germination Unsuccessful (Nicht aufgegangen), Flowered (Geblüht), Produced Fruit (Gefruchtet), Plant Site (Standplanze), Current Amount for Years 1909–1924 (Vorhandene Anzahl), Distribution (Allgemein verteilt), Pricelist (In Tauschliste), Photograph (Photographie), Herbarium (Herbarium), Correct Determination (Richtig bestimmt), Comments, Commentary (Besondere Bemerkungen).

The Dendrological Society's Register of Plants is essential for sorting out the history of the introduction of woody species; therefore, it has been gradually converted into electronic form and is gradually being processed. All data have been recorded as they appear in the Register. Correction of translations from German has been completed.

Special attention was given to the collection of seeds (plants) from natural locations. In addition to other collectors and botanists, E. Taquet, H. Shirasawa and J. Unger have played important roles in these collections. H. Shirasawa was an eminent Japanese botanist and dendrologist, whose fame stems from the introduction of several woody species from Asia. Several bear his name: e.g. *Callicarpa*, *Ulmus*, *Acer*, etc. E. Taquet was a pioneer of studying plants in Korea and an important collector that sent thousands of samples of Korean plants and seeds to Europe at the beginning of the last century (1908–1912). Some also bear his name: e.g., *Tilia*, *Ligularia* and *Pyrus*. J. Unger was a notable collector of seeds and plants from Japan, Korea and China. He is credited with the introduction of woody species to Europe mainly from 1908–1911.

The Register of Plants provides detailed evidence of the gathering of biological material and its further cultivation.

Table 1 does not include all of the categories that were present in the header of the Register of Plants. The following categories have been included: Entry number under which the item has been written in the Register; the original name of the woody species (as it was written in the Register); the

name of the collector and if available the number of the type specimen. The comments section includes information on the number of cultivars from a given year, whether the item was obtained as a plant or how many species were planted into parks. It also includes synonyms (in cursive) and the oldest documented entry about its cultivation. The currently correct name of the woody species (in cursive), the origin, year of introduction to Europe, year of introduction to Průhonice and Czech are provided from other sources.

In order to compare the individual taxa even with other historical sources and works dealing with the history of introduction, the Internet portals the Plant List, The International Plant Names Index (IPNI), and others were used to determine the current correct name. Fundamental to the study were the publications from Rehder (1940, 1949), and Krüssmann (1972, 1976–1978). Latin names did not always contain the authors' names, which complicated their identification. Therefore, all possible variations of the names have been given.

The origin of the individual woody species is marked by either EV for Europe, AS for Asia, or AM for America.

To evaluate introductions, the table contains the year of introduction to Europe according to Rehder (1940). The year of introduction to Czech lands was excerpted from the work of A. M. Svoboda (1976, 1981), Pejchal and Krejčířík (2010, 2012), Tábor (1987, 1991) and others. The year of introduction to Průhonice was found in the Register of Plants that also included information on the time of planting (Tag der Aussaat) and day of germination (Tag der Keimung). Here, the year of introduction is considered the year of planting. If the plant's germination was unsuccessful and no additional information is available on its cultivation (number of individuals and in which year) then the item was not included in the list. Only a few items were obtained as plants but in these cases the year the plant was obtained is considered the year of introduction. If the items from the mentioned collectors coincided, then only those items that were introduced earlier were included in the list.

Results and discussion

The seed (plant) collections of E. Taquet, H. Shirasawa and J. Unger play a significant role in the introduction of woody species to Průhonice. According to information from the Register of Plants, the seed collections of Taquet from Korea and Shirasawa and Unger from Japan appeared in Průhonice even before World War I. From 1909 to 1912, these collectors introduced to Průhonice 157 taxa of woody species that were planted and germinated successfully or were brought as plants. The most items were introduced in 1910 (57) and 1911 (61). The bulk of the imported items come from Asia. Seeds from the expeditions to Asia were not only a significant source for the Dendrological Society's gardens but also for the park. This is also evident from the records in the Register of Plants. Detailed results from the investigation of the Register of Plants are given in Table 1.

Currently, the Průhonice Park is a home to excellent examples of woody species that have come from the seeds provided by these collections: *Acer palmatum* Thunb.; *Clethra barbinervis* Siebold & Zucc. of which in 1911 there

Table 1 Overview of introduced woody species into Průhonice – contributions of E. Taquet, H. Shirasawa and J. Unger

Register number	Currently correct name	Original name in the Register of plants	Collector	Collection Number	Origin	Introduction in Europe	Initial introduction to Průhonice/Czech	Comments – number of plants listed in the Register, synonyms, comments from the Register, site of introduction
931	<i>Abies firma</i> Siebold & Zucc.	<i>Abies firma</i> S.et Z.	S		AS	1861	1909/1865	1865 Hluboká
2348	<i>Abies</i> sp.	<i>Abies</i>	T				1911	year 1911 (6 pc.), Hallaisan 1600–1800 m
2469	<i>Abies</i> sp.	<i>Abies</i> "Ihirabe"?	U				1911	year 1911 (174 pc.)
2471	<i>Abies</i> sp.	<i>Abies</i> "dayriusen"?	U				1911	year 1911 (235 pc.)
2482	<i>Abies</i> sp.	<i>Abies</i> "Urajino moni"?	U				1911	year 1911 (1500 pc.)
1666	<i>Abutilon</i> sp.	<i>Abutilon</i>	T	209			1910	year 1910 (5 pc.)
2521	<i>Acer crataegifolium</i> Siebold & Zucc.	<i>Acer crataegifolium</i>	U	165	AS	1879	1912	year 1914 (33 pc.)
2465	<i>Acer micranthum</i> Siebold & Zucc.	<i>Acer micranthum</i>	U	160	AS	1879	1911	year 1914 (45 pc.)
2468	<i>Acer palmatum</i> Thunb.	<i>Acer palmatum</i> "Tetsukaida"	U	116	AS	1820	1911	year 1914 (67 pc.)
2536	<i>Acer palmatum</i> Thunb.	<i>Acer palmatum</i>	U	79	AS	1820	1911/1811	year 1911 (227 pc.)! 1811 Lednice
1823	<i>Acer pictum</i> Thunb.	<i>Acer pictum</i> Thbg.	T	33	AS	1880	1910	year 1911 (5 pc.), syn. <i>Acer mono</i> Maxim
1795	<i>Acer</i> sp.	<i>Acer</i>	T	42			1911	year 1911 (4 pc.)
2485	<i>Acer</i> sp.	<i>Acer</i> sp. "Kashiwa", "Kajede"	U	98			1911	year 1914 (52 pc.)
2478	<i>Acer</i> sp.	<i>Acer</i> sp. "Kaede", "Kowanchiwa"	U				1911	year 1914 (61 pc.)
926	<i>Albizia julibrissin</i> Durazz.	<i>Albizia julibrissin</i> Poir.	S		AS	1745	1909	
2517	<i>Alnus incana</i> (L.) Moench	<i>Alnus incana</i>	U	184	EV, AM		1911/1801	year 1911 (10 pc.), 1801 Lednice
941	<i>Alnus japonica</i> (Thunb.) Steud.	<i>Alnus japonica</i> S.et Z.	S		AS	1886	1909	year 1914 (6 pc.)
1971	<i>Alnus firma</i> Siebold & Zucc.	<i>Alnus Yasha</i>	S		AS	1892	1910	year 1910 (75 pc.), syn. <i>Alnus yasha</i> Matsum.
1900	<i>Amelanchier asiatica</i> (Siebold & Zucc.) Endl. ex Walp.	<i>Pyrus Taqueti</i> Lév.	T	168	AS	1865	1910	syn. <i>Pyrus taqueti</i> H.Lév.
1598	<i>Ampelopsis heterophylla</i> (Thunb.) Siebold & Zucc., nebo <i>A. heterophylla</i> Blume	<i>Ampelopsis heterophylla</i>	T	195	AS	1855	1910	year 1910 (250 pc.)
1853	<i>Ampelopsis</i> sp.	<i>Ampelopsis</i>	T	415			1910	year 1910 (60 pc.)
1813	<i>Aristolochia</i> sp.	<i>Aristolochia</i>	T	252			1910	
2507	<i>Aucuba japonica</i> Thunb.	<i>Aucuba japonica</i>	U	176	AS	1861	1911/1823	year 1914 (4 pc.), 28 pc. planted in park, 1823 Č. Hrádek, N. Hradý
2378	<i>Berberis koreana</i> Palib.	<i>Berberis koreana</i> Palib.	T	93	AS	1905	1911	year 1914 (115 pc.), from Hallaisan mountains 2000 m
1964	<i>Berberis thunbergii</i> DC.	<i>Berberis Thunbergi</i>	S		AS	1864	1910	year 1910 (130 pc.), 50 pc. planted in park, year 1910 plants brought from the Barbier company
1794	<i>Caesalpinia</i> sp.	<i>Caesalpinia</i>	T	288			1910	year 1910 (6 pc.)

First continuation of the table								
Register number	Currently correct name	Original name in the Register of plants	Collector	Collection Number	Origin	Introduction in Europe	Initial introduction to Průhonice/Czech	Comments – number of plants listed in the Register, synonyms, comments from the Register, site of introduction
2433	<i>Callicarpa japonica</i> Thunb.	<i>Callicarpa japonica</i>	U	130	AS	1845	1911	year 1911 (55 pc.), 2 pc. planted in park
1778	<i>Callicarpa</i> sp.	<i>Callicarpa</i>	T	288			1910	year 1910 (25 pc.)
1854	<i>Callicarpa</i> sp.	<i>Callicarpa</i>	T	399			1910	year 1910 (180 pc.)
1880	<i>Callicarpa</i> sp.	<i>Callicarpa</i>	T	162			1910	year 1911 (6 pc.)
964	<i>Camellia japonica</i> L.	<i>Thea japonica</i>	S		AS	1742	1909	year 1910 (5 pc.), syn. <i>Thea japonica</i> Baill.
955	<i>Carpinus japonica</i> Blume	<i>Carpinus japonica</i> Bl.	S		AS	1879	1909	year 1910 (24 pc.)
1660	<i>Carpinus</i> sp.	<i>Carpinus</i>	T	182			1910	
2366	<i>Carpinus</i> sp.	<i>Carpinus</i>	T	244			1911	year 1914 (8 pc.), Probe an Sargent
2367	<i>Carpinus</i> sp.	<i>Carpinus</i>	T	243			1911	year 1914 (42 pc.), Probe an Vilmorin
2444	<i>Carpinus</i> sp.	<i>Carpinus</i>	U	107			1911	year 1915 (1 pc.)
2354	<i>Celtis</i> sp.	<i>Celtis</i>	T	238			1911	year 1911 (43 pc.), Probe an Sargent, from Hallaisan mountains 400 m
956	<i>Cephalotaxus harringtonii</i> (Knight ex J.Forbes) K.Koch	<i>Cephalotaxus drupacea</i> S.et Z.	S		AS	1829	1909/1845	year 1910 (5 pc.), 1845 Sychrov
1899	<i>Cissus</i> sp.	<i>Cissus</i>	T	171			1910	year 1910 (35 pc.)
2285	<i>Clematis apiifolia</i> DC.	<i>Clematis apiifolia</i>	T	188	AS	1863	1911	year 1914 (1 pc.)
2284	<i>Clematis dioscoreifolia</i> H.Lév. & Vaniot	<i>Clematis dioscoreaefolia</i>	T	189	AS	1911	1911	year 1914 (35 pc.)
2381	<i>Clematis florida</i> Thunb.	<i>Clematis florida</i> Thb.	T	16	AS	1776	1911	year 1911 (7 pc.), year 1914 (56 pc.), from Hallaisan mountains 1800 m
2513	<i>Clethra barbinervis</i> Siebold & Zucc.	<i>Clethra barbinervis</i>	U	102	AS	1870	1911	year 1911 (448 pc.)!
966	<i>Cornus officinalis</i> Siebold & Zucc.	<i>Cornus officinalis</i> S. et Z.	S		AS	1877	1909	
1737	<i>Cornus</i> sp.	<i>Cornus</i> sp.	T	106			1910	year 1910 (4 pc.), Probe an Vilmorin
2370	<i>Corylus</i> sp.	<i>Corylus</i>	T	237			1911	year 1912 (4 pc.), Probe an Sargent, from Hallaisan mountains 800 m
1781	<i>Crataegus</i> sp.	<i>Crataegus</i>	T	47			1910	year 1910 (35 pc.)
936	<i>Cryptomeria japonica</i> (Thunb. ex L.f.) D.Don	<i>Cryptomeria japonica</i> Don	S		AS	1861	1909/1845	year 1910 (340 pc.), 1845 Sychrov
2437	<i>Cunninghamia lanceolata</i> (Lamb.) Hook.	<i>Cunninghamia sinensis</i>	U		AS	1804	1911/1844	year 1911 (117 pc.), 1844 Prague Botanical Garden
2488	<i>Deutzia scabra</i> Thunb.	<i>Deutzia scabra</i> Thn. typica	U	150	AS	1822	1911	year 1911 (489 pc.)!, 5 pc. planted in park
2428	<i>Diervilla japonica</i> DC.	<i>Diervilla japonica</i> DC.	U	178	AS	1892	1911	year 1911 (890 pc.)!, 3 pc. planted in park, syn. <i>Weigela japonica</i> Thunb.

Second continuation of the table								
Register number	Currently correct name	Original name in the Register of plants	Collector	Collection Number	Origin	Introduction in Europe	Initial introduction to Průhonice/Czech	Comments – number of plants listed in the Register, synonyms, comments from the Register, site of introduction
1690	<i>Diervilla rosea</i> (Lindl.) Walp.	Diervilla rose	T	279	AS	1849	1910	year 1910 (180 pc.), Hallaisan, 1000 m, Probe an Sargent
2346	<i>Diospyros kaki</i> L.f.	Diospyros kaki	T	304	AS	1796	1911	
2395	<i>Distylium racemosum</i> Siebold & Zucc.	Distylium racemosum	T	74	AS	1870	1911	year 1916 (3 pc.), from Hallaisan mountains 600 m
979	<i>Ehretia macrophylla</i> Wall. nebo <i>Ehretia dicpc. onii</i> Hance	Ehretia macrophylla	S		AS	1897	1909	year 1915 (12 pc.)
2501	<i>Enkianthus japonicus</i> Hook.f.	Enkianthus japonicus	U	113	AS	1870	1911	year 1911 (105 pc.)
938	<i>Euonymus alatus</i> (Thunb.) Siebold	Evonymus alatus Thbg.	S		AS	1860	1909	year 1910 (20 pc.)
2294	<i>Euonymus maackii</i> Rupr.	Evonymus coreanus Lévl.	T	11	AS	1860	1910	from Hallaisan mountains 1000–1200 m, <i>Euonymus coreanus</i> H.Lév.
2506	<i>Euonymus fortunei</i> (Turcz.) Hand.-Mazz.	Evonymus radicans	U	158	AS	1865	1911/1880	year 1915 (91 pc.), syn. <i>Euonymus radicans</i> (Miq.) Siebold ex Miq., 1880 Sychrov
1647	<i>Euonymus</i> sp.	Evonymus	T	65			1910	year 1910 (12 pc.), immergrün (evergreen)
2489	<i>Euonymus subtriflorus</i> Blume	Euonymus subtriflora	U	154	AS	1860	1911	year 1914 (19 pc.), syn. <i>Euonymus alatus</i> (Thunb.) Siebold
2450	<i>Euptelea polyandra</i> Siebold & Zucc.	Euptelea polyandra	U	108	AS	1877	1911	year 1911 (428 pc.)!
928	<i>Ginkgo biloba</i> L.	Ginkgo biloba L.	S		AS	1730	1909/1801	year 1910 (71 pc.), 1801 Lednice
978	<i>Gleditsia japonica</i> Miq.	Gleditsia japonica	S		AS	1800	1909	year 1914 (1 pc.)
2459	<i>Hibiscus mutabilis</i> L.	Hibiscus mutabilis	U	141	AS	1690	1911/1823	year 1911 (460 pc.), 1823 Č.Hrádek
2443	<i>Hydrangea involucrata</i> Siebold	Hydrangea involucrata	U	181	AS	1864	1911	year 1911 (10 pc.)
2535	<i>Hydrangea paniculata</i> Siebold	Hydrangea paniculata	U	68	AS	1864	1911/1880	year 1911 (19 pc.), 1880 Sychrov
1674	<i>Hypericum</i> sp.	Hypericum	T	198			1910	ganz niedrig, feuchte Wiesen (very low wet meadows)
975	<i>Chamaecyparis obtusa</i> Siebold & Zucc.) Endl.	Chamaecyparis obtusa S. et Z.	S		AS	1861	1909/1879	year 1911 (991 pc.), 1879 Sychrov
986	<i>Chamaecyparis pisifera</i> (Siebold & Zucc.) Endl.	Chamaecyparis pisifera S.et Z.	S		AS	1861	1909/1865	year 1915 (9 pc.), 1865 Hluboká
939	<i>Idesia polycarpa</i> Maxim.	Idesia polycarpa Maxim.	S		AS	1864	1909	year 1910 (19 pc.), 4 pc. planted in park
974	<i>Ilex integra</i> Thunb.	Ilex integra Thbg.	S		AS	1864	1909	year 1910 (8 pc.)
977	<i>Ilex latifolia</i> Thunb.	Ilex latifolia Thbg.	S		AS	1840	1909	year 1910 (8 pc.)
961	<i>Ilex pedunculosa</i> Miq.	Ilex pedunculosa Miq.	S		AS	1892	1909	year 1910 (3 pc.)
2426	<i>Ilex serrata</i> Thunb.	Ilex Sieboldii	U	173	AS	1866	1912	year 1915 (1 pc.), syn. <i>Ilex sieboldii</i> Miq.

The third continuation of the table								
Register number	Currently correct name	Original name in the Register of plants	Collector	Collection Number	Origin	Introduction in Europe	Initial introduction to Průhonice/Czech	Comments – number of plants listed in the Register, synonyms, comments from the Register, site of introduction
1955	<i>Juglans ailanthifolia</i> Carrière var. <i>cordiformis</i> (Maxim.) Rehder	<i>Juglans sieboldiana</i> var. <i>cordiformis</i>	S		AS	1862	1910	year 1911 (17 pc.)
1958	<i>Juglans sieboldiana</i> Maxim.	<i>Juglans Sieboldiana</i>	S		AS	1860	1910	year 1914 (3 pc.), 3 pc. planted in park, syn. <i>Juglans ailanthifolia</i> Carrière
1872	<i>Lespedeza bicolor</i> Turcz.	<i>Lespedeza bicolor</i>	T	137	AS	1856	1910	year 1910 (268 pc.), from Hallaisan mountains
2267	<i>Lespedeza juncea</i> (L.f.) Pers.	<i>Lespedeza juncea</i>	T	184	AS	1892	1911	year 1911 (37 pc.)
2446	<i>Ligustrum ibota</i> Siebold	<i>Ligustrum Ibota</i>	U	121	AS	1870	1911	year 1911 (343 pc.)!
950	<i>Ligustrum japonicum</i> Thunb.	<i>Ligustrum japonicum</i> Thbg.	S		AS	1845	1909/1847	year 1911 (26 pc.), Chudenice 1847
2291	<i>Ligustrum</i> sp.	<i>Ligustrum multifidum</i>	T	26	?	?	1911	year 1911 (7 pc.), from Hallaisan mountains 2000 m
1834	<i>Lonicera</i> sp.	<i>Lonicera</i>	T	402			1910	
951	<i>Magnolia kobus</i> DC.	<i>Magnolia kobus</i> D.C.	S		AS	1865	1909	year 1910 (3 pc.)
1954	<i>Magnolia obovata</i> Thunb.	<i>Magnolia hypoleuca</i>	S		AS	1865	1910/1880	year 1910 (37 pc.), syn. <i>Magnolia hypoleuca</i> Siebold & Zucc., 1880 Sychrov
2289	<i>Magnolia</i> sp.	<i>Magnolia</i>	T	24			1911	from Hallaisan mountains 1700 m
2481	<i>Melia azedarach</i> L.	<i>Melia japonica</i>	U	153	AS	1719	1911/1804	year 1911 (81 pc.), syn. <i>Melia japonica</i> G.Don, 1804 Lednice
1610	<i>Melia</i> sp.	<i>Melia</i>	T	368			1910	year 1910 (155 pc.), 2 pc. planted in park
1965	<i>Nandina domestica</i> Thunb.	<i>Nandina domestica</i>	S		AS	1804	1910	year 1914 (8 pc.)
2451	<i>Paliurus ramosissimus</i> (Lour.) Poir.	<i>Paliurus aubletia</i>	U	169	AS	1816	1911	year 1914 (6 pc.)
943	<i>Paulownia tomentosa</i> Steud.	<i>Paulownia tomentosa</i> Kanitz.	S		AS	1834	1909/1844	syn. <i>Paulownia imperialis</i> Siebold & Zucc., 1844 Prague-Royal Game Reserve
2498	<i>Phellodendron amurense</i> Rupr.	<i>Phellodendron amurense</i>	U	152	AS	1856	1911	year 1911 (1300 pc.)! 3 pc. planted in park
2534	<i>Picea</i> sp.	<i>Picea</i> "Fir Moni"	U				1911	
2431	<i>Picea torano</i> (Siebold ex K. Koch) Koehne	<i>Picea polita</i> (Siebold & Zucc.) Carrière	U	129	AS	1861	1911	
948	<i>Pinus densiflora</i> Siebold & Zucc.	<i>Pinus densiflorus</i> S.et Z.	S		AS	1854	1909/1879	year 1910 (41 pc.), 1879 Sychrov
960	<i>Pinus parviflora</i> Siebold & Zucc.	<i>Pinus parviflora</i> S. et Z.	S		AS	1846	1909/1879	year 1916 (255 pc.), 1879 Sychrov
2430	<i>Pinus</i> sp.	<i>Pinus</i> "Pora momi"	U				1911	year 1911 (535 pc.)
929	<i>Pinus thunbergii</i> Parl.	<i>Pinus thunbergii</i> Bal.	S		AS	1855	1909	year 1916 (2 pc.)

Fourth continuation of the table								
Register number	Currently correct name	Original name in the Register of plants	Collector	Collection Number	Origin	Introduction in Europe	Initial introduction to Průhonice/Czech	Comments – number of plants listed in the Register, synonyms, comments from the Register, site of introduction
1636	<i>Pittosporum tobira</i> (Thunb.) W.T.Aiton	<i>Pittosporum Tobira</i>	T		AS	1804	1910	year 1914 (2 pc.)
976	<i>Platycarya strobilacea</i> Siebold & Zucc.	<i>Platycarya strobilacea</i>	S		AS	1845	1909	year 1910 (23 pc.)
935	<i>Podocarpus macrophyllus</i> (Thunb.) Sweet	<i>Podocarpus macrophylla</i> Don.	S		AS	1804	1909	year 1916 (2 pc.)
1754	<i>Poncirus trifoliata</i> (L.) Raf.	<i>Citrus trifoliata</i>	T	404	AS	1850	1910	year 1910 (40 pc.), syn. <i>Citrus trifoliata</i> L.
980	<i>Pterocarya rhoifolia</i> Siebold & Zucc.	<i>Pterocarya sorbifolia</i>	S		AS	1888	1909	year 1910 (43 pc.), 6 pc. planted in park, syn. <i>Pterocarya sorbifolia</i> Siebold & Zucc.
925	<i>Pterocarya stenoptera</i> C.DC.	<i>Pterocarya stenoptera</i>	S		AS	1860	1909	year 1910 (23 pc.), 6 pc. planted in park
1870	<i>Pyrus</i> sp.	<i>Pyrus</i> sp.	T	151			1910	year 1914 (1 pc.), from Hallaisan mountains
1956	<i>Quercus gilva</i> Blume	<i>Quercus gilva</i>	S		AS	1850	1910	
1973	<i>Quercus glauca</i> Thunb.	<i>Quercus Vibrayana</i>	S		AS	1854	1910	year 1911 (10 pc.), syn. <i>Quercus vibrayeana</i> Franch. & Sav.
1970	<i>Quercus phillyraeoides</i> Gray	<i>Quercus phyllireoides</i>	S		AS	1862	1910	year 1910 (10 pc.)
2425	<i>Rhamnus japonica</i> Maxim.	<i>Rhamnus japonica</i>	U		AS	1888	1911	year 1911 (93 pc.)
2316	<i>Rhamnus</i> sp.	<i>Rhamnus</i> sp.	T	136			1911	year 1911 (42 pc.), from Hallaisan mountains 2000 m
1826	<i>Rhododendron</i> sp.	<i>Rhododendron</i>	T	413			1910	year 1910 (58 pc.)
1831	<i>Rhododendron</i> sp.	<i>Rhododendron</i>	T	401			1910	year 1910 (153 pc.), Probe an Vilmorin
2319	<i>Rhododendron</i> sp.	<i>Rhododendron</i>	T	121			1911	year 1911 (250 pc.)! from Hallaisan mountains 1800 m
2328	<i>Rhododendron</i> sp.	<i>Rhododendron</i>	T	133			1911	year 1911 (1070 pc.)!, Probe an Vilmorin an Sargent, from Hallaisan mountains 1900 m
2519	<i>Rhus chinensis</i> Mill.	<i>Rhus semi-alata</i>	U	145	AS	1784	1911	year 1911 (50 pc.), syn. <i>Rhus semialata</i> Murray
1573	<i>Rhus</i> sp.	<i>Rhus</i>	T	219			1910	year 1911 (61 pc.)
982	<i>Rhus succedanea</i> L.	<i>Rhus succedonia</i> L.	S		AS	1863	1909	year 1910 (8 pc.)
2483	<i>Rhus toxicodendron</i> L.	<i>Rhus toxicodendron</i>	U	118	AM	1622	1912/1801	year 1912 (27 pc.), 1801 Lednice
2508	<i>Rhus trichocarpa</i> Miq.	<i>Rhus trichocarpa</i>	U	163	AS	1890	1911	year 1911 (20 pc.)
957	<i>Rhus verniciflua</i> Stokes	<i>Rhus vernicifera</i> D.C.	S		AS	1874	1909	year 1910 (6 pc.), syn. <i>Rhus vernicifera</i> DC.
1811	<i>Rosa luciae</i> Franch. & Rochebr.	<i>Rosa luciae</i> Fr.et Rochbr.	T		AS	1891	1910	year 1910 (170 pc.)

Fifth continuation of the table								
Register number	Currently correct name	Original name in the Register of plants	Collector	Collection Number	Origin	Introduction in Europe	Initial introduction to Průhonice/Czech	Comments – number of plants listed in the Register, synonyms, comments from the Register, site of introduction
2439	<i>Rosa multiflora</i> Thunb.	<i>Rosa multiflora</i>	U	148	AS	1868	1911	year 1911 (1225 pc.)!
1621	<i>Rosa</i> sp.	<i>Rosa</i>	T	317			1910	year 1910 (400 pc.)!, Probe an Sargent
963	<i>Sciadopitys verticillata</i> (Thunb.) Siebold & Zucc.	<i>Sciadopitys verticillata</i> S.et Z.	S		AS	1861	1909/1859	year 1915 (382 pc.), 1859 Nové Hradky
1764	<i>Securinega suffruticosa</i> (Pall.) Rehder	<i>Securinega flueggoides</i> M.Arg.	T	283	AS	1783	1910	year 1910 (350 pc.)!, syn. <i>Securinega fluggeoides</i> (Müll.Arg.) Müll.Arg.
2388	<i>Schisandra nigra</i> Maxim.	<i>Schizandra nigra</i>	T	81	AS	1892	1911	year 1914 (14 pc.)
1614	<i>Smilax</i> sp.	<i>Smilax</i>	T	364			1910	year 1914 (3 pc.), sehr gross, Wälder Probe an Sargent
1725	<i>Smilax</i> sp.	<i>Smilax</i>	T	371			1910	year 1912 (2 pc.)
971	<i>Sophora japonica</i> L.	<i>Sophora japonica</i> L.	S		AS	1747	1909/1801	year 1914 (1 pc.), 1801 Lednice
1766	<i>Sophora</i> sp.	<i>Sophora</i>	T	294			1910	year 1910 (10 pc.)
2307	<i>Sorbus aucuparia</i> L.	<i>Sorbus aucuparia</i>	T	69	EV, AS		1911/1801	year 1914 (30 pc.), in Wäldern, Probe an Sargent, 1801 Lednice
953	<i>Stachyurus praecox</i> Siebold & Zucc.	<i>Stachyurus praecox</i> S.et Z.	S		AS	1865	1909	year 1911 (11 pc.), 3 pc. planted in park
2528	<i>Staphylea bumalda</i> DC.	<i>Staphylea bumalda</i>	U	94	AS	1812	1911	year 1914 (385 pc.)
1583	<i>Stephanandra</i> sp.	<i>Stephanandra</i>	T	229			1910	year 1910 (35 pc.), Probe an Sargent
1654	<i>Stephanandra</i> sp.	<i>Stephanandra</i>	T				1910	year 1911 (42 pc.), Wälder (Hallaisan 1600 m)
983	<i>Stewartia pseudocamellia</i> Maxim.	<i>Stewartia pseudocamellia</i> Max.	S		AS	1874	1909	year 1911 (2 pc.)
970	<i>Styrax obassia</i> Siebold & Zucc.	<i>Styrax obassia</i> S.et Z.	S		AS	1879	1909	
2347	<i>Taxus cuspidata</i> Siebold & Zucc.	<i>Taxus cuspidata</i>	T		AS	1855	1911	year 1914 (32 pc.)
2464	<i>Thuja orientalis</i> L.	<i>Thuja orientalis</i>	U		AS	1737	1911/1802	year 1911 (318 pc.), 1802 Lednice
2538	<i>Thujopsis dolabrata</i> (Thunb. ex L.f.) Siebold & Zucc.	<i>Thujopsis dolabrata</i>	U		AS	1853	1911/1859	year 1915 (72 pc.), 1859 Nové Hradky
967	<i>Tilia miqueliana</i> Maxim.	<i>Tilia Miqueliana</i> Max.	S		AS	1900	1909	year 1910 (4 pc.)
954	<i>Torreya nucifera</i> (L.) Siebold & Zucc.	<i>Torreya nucifera</i> S.et Z.	S		AS	1764	1909/1845	1845 Sychrov
2466	<i>Trochodendron aralioides</i> Siebold & Zucc. (cf.)	<i>Kalmia</i> "Yamaguruma"	U	170	AS	1894	1911	year 1915 (2 pc.)
2454	<i>Tsuga</i> sp.	<i>Tsuga</i>	U				1911	
1966	<i>Ulmus parvifolia</i> Jacq.	<i>Ulmus parvifolia</i>	S		AS	1794	1910/1804	year 1910 (15 pc.), 1804 Lednice
934	<i>Viburnum odoratissimum</i> Ker Gawl.	<i>Viburnum odoratissimum</i> Ker.	S		AS	1818	1909	year 1910 (1 pc.)
1716	<i>Vitex</i> sp.	<i>Vitex</i>	T	248			1910	year 1910 (55 pc.)

Sixth continuation of the table								
Register number	Currently correct name	Original name in the Register of plants	Collector	Collection Number	Origin	Introduction in Europe	Initial introduction to Průhonice/Czech	Comments – number of plants listed in the Register, synonyms, comments from the Register, site of introduction
1847	<i>Vitis thunbergii</i> Siebold & Zucc.	<i>Vitis Thunbergii</i>	T	373	AS	1879	1910	year 1910 (160 pc.)
9646	<i>Weigela coraiensis</i> Thunb.	<i>Diervilla coraensis</i> D.C.	S		AS	1850	1924	syn. <i>Diervilla coraensis</i> (Thunb.) DC.
2516	<i>Wisteria sinensis</i> (Sims) DC.	<i>Wistaria chinensis</i>	U	140	AS	1816	1911	year 1911 (205 pc.), syn. <i>Wisteria chinensis</i> (Sims) DC.
949	<i>Zanthoxylum ailanthoides</i> Siebold & Zucc.	<i>Zanthoxylon ailanthoides</i>	S		AS		1909	year 1911 (39 pc.)
2525	<i>Zanthoxylum piperitum</i> (L.) DC.	<i>Xanthoxylon piperitum</i>	U	90	AS	1877	1911	year 1916 (4 pc.)
2453	<i>Zanthoxylum schinifolium</i> Siebold & Zucc.	<i>Xanthoxylon schimifolium</i>	U	120	AS	1877	1911	year 1915 (3 pc.), syn. <i>Fagara schinifolia</i> Salisb.
1622	<i>Zanthoxylum</i> sp.	<i>Zanthoxylon</i>	T	326			1910	year 1910 (20 pc.)
1681	<i>Zanthoxylum</i> sp.	<i>Xanthoxylon</i>	T	273			1910	year 1910 (15 pc.)
1706	<i>Zanthoxylum</i> sp.	<i>Xanthoxylon</i>	T	327			1910	year 1911 (5 pc.)
1820	<i>Zanthoxylum</i> sp.	<i>Xanthoxylon</i>	T	264			1910	year 1910 (65 pc.)

Collectors: T – Taquet, S – Shirasawa, U – Unger. Origin: EV – Europe, AS – Asia, AM – America

were 448 individuals produced; *Phellodendron amurense* Rupr. of which in 1911 there were over 1 300 individuals (!); *Picea torano* (Siebold ex K.Koch) Koehne better known as *Picea polita* (Siebold & Zucc.) Carrière; *Pinus parviflora* Siebold & Zucc.; *Pterocarya rhoifolia* Siebold & Zucc.; *Pterocarya stenoptera* C.DC.; *Taxus cuspidata* Siebold & Zucc.; *Thujopsis dolabrata* (Thunb. ex L.f.) Siebold & Zucc.; *Torreya nucifera* (L.) Siebold & Zucc., and others.

Aside from the species mentioned growing in the Průhonice Park, other species are currently used in gardening and landscape design: *Berberis koreana* Palib., *Berberis thunbergii* DC., *Deutzia scabra* Thunb., *Gleditsia japonica* Miq., *Ilex integra* Thunb. *Juglans ailanthifolia* Carrière var. *cordiformis* (Maxim.) Rehder, *Magnolia kobus* DC., *Rosa multiflora* Thunb., and others. The following species also have the potential for further distribution: *Hydrangea involucrata* Siebold, *Ilex pedunculosa* Miq., *Nandina domestica* Thunb., *Securinega suffruticosa* (Pall.) Rehder and *Stachyurus praecox* Siebold & Zucc.

A comparison of the times of introduction to Europe and to Průhonice shows that at least 80 of the 157 taxa imported by these collectors to Průhonice were first introduced to the Czech lands. Fifty items in the Register of plants were recorded only with the family name usually with a collection number. These items were considered evidence of introduction, but were not further evaluated.

One item from Taquet's collection was simultaneously introduced to Europe and Průhonice in 1911: *Clematis dioscoreifolia* H. Lév. & Vaniot. Three years later, 35 individuals of this plant were registered in the Dendrological Society's garden. This was the first introduction to Průhonice, but also to the Czech lands (Czech, Moravia).

In 1909, *Tilia miqueliana* Maxim. (Collector Shirasawa) was grown in the Dendrological Society's Garden nine years before it was formally introduced into Europe. In 1914, there were 4 individuals.

In 1911, one item (Collector Unger) marked as *Kalmia* "Yamaguruma", which is most probably *Trochodendron aralioides* Siebold & Zucc., was grown in Průhonice 17 years before being formally introduced to Europe.

In 1911, the total of 890 individuals of *Diervilla japonica* DC. (Collector Unger) were cultivated in the Dendrological Society's garden, 19 years before being formally introduced to Europe. There were three specimen planted in the Průhonice Park along with 37 specimens of *Lespedeza juncea* (L.f.) Pers. (Collector Taquet) and 14 specimens of *Schisandra nigrata* Maxim. (Collector Taquet).

Only 27 of the taxa brought to Průhonice by these collectors were first introduced into other castle parks in our country. These include parks in Sychrov 1845, 1880; Lednice 1801, 1804, 1811; Prague – Royal Game Reserve 1844; Prague Botanical Garden 1844; Chudenice 1847; Červený Hrádek 1823; Nové Hradky 1859; and Hluboká 1865.

From the overview it is clear that at the time there was not enough knowledge about the introduction of woody species and the conditions needed to grow them; several species with low frost resistance that do not grow in the Czech climatic conditions were tested: e.g., *Ehretia macrophylla* Wall., *Pittosporum tobira* (Thunb.) W. T. Aiton, *Hibiscus mutabilis* L. and others.

For some species, it was not possible to determine the year of introduction to Europe and therefore we could not compare information about their introduction. This includes, e.g., *Zanthoxylum ailanthoides* Siebold & Zucc.

A. M. Svoboda (1976, 1981) compiled the first overview of selected introduced species including their place of introduction. His work has broadened our knowledge of other woody species introduced into our territory and included the names of the collectors.

The unique data provided about the time of introduction to our territory can be gradually refined to more details with further study of other historic documents. This, however, does not lower its current value.

Conclusion

The Dendrological Society in Průhonice has played a significant role in the introduction of woody species to our country. The manuscript of the Register of Plants that covers the years between 1909 and 1924 and has 10,050 items is evidence to this. The seed (plant) collections of E. Taquet, H. Shirasawa and J. Unger have played a key role in the introduction of woody species to Průhonice. From 1909 to 1912, in total 157 taxa of woody species from their collections were introduced to Průhonice; these were planted and successfully germinated or were planted as plants. The most introductions occurred in 1910 (57) and 1911 (61). The bulk of the imported items came from Asia.

From the total number of 157 introduced taxa, 80 items were introduced first to Průhonice, meaning also first introduction into the Czech lands. Totally, 50 items in the Register of plants were recorded only with the family name usually with a collection number. These items were considered evidence of introduction, but were not further evaluated. Only 27 of the taxa brought to Průhonice by these collectors were first introduced into other sites of interest in our country. A comparison of published data on the introduction of woody species to Europe and to the Czech lands shows the significant role the Dendrological Society in Průhonice has played in the introduction of woody species not only to what is today the Czech Republic, but also to Europe. An integral part of this work is the overview of introduced woody species to Průhonice from these collectors.

Acknowledgements

This paper was supported within the project "The significance of the introduction and assortments of woody species for historic sites of garden design" (DF12P01OVV005), which is realized within the Applied Research and Development of National and Cultural Identity Programme (NAKI) of the Czech Ministry of Culture.

References

IPNI. The International Plant Names Index. [cit. 2014-08-12] Dostupné na <<http://www.ipni.org/index.html>>.
KRÜSSMANN, G. 1972. Handbuch der Nadelgehölze. Berlin, Hamburg, 1972. 366 p.
KRÜSSMANN, G. 1976, 1977, 1978. Handbuch der Laubgehölze. Berlin und Hamburg, 1: 1–486, 2: 1–466, 1–496.

MACHOVEC, J. 1982. Sadovnická dendrologie. Praha : Státní pedagogické nakladatelství, 1982. s. 1–246.

NOŽIČKA, J. 1966. Počátky a vývoj okrasného zahradnictví a sadovnictví v českých zemích. In Věd. práce Čs. zem. muz., 1966, č. 5, s. 7–75.

PEJCHAL, M. – KREJČÍŘÍK, P. 2010. Příspěvek k historii introdukce dřevin v Lednicko-valtickém areálu. In Acta Pruhoniana, 2010, č. 95, s. 97–114.

PEJCHAL, M. – KREJČÍŘÍK, P. 2012. Příspěvek k historii pěstování domácích dřevin a jejich kultivarů v Lednicko-valtickém areálu. In Acta Pruhoniana, 2012, č. 100, s. 97–107.

REHDER, A. 1940. Manual of cultivated Trees and Shrubs. New York : MacMillan Group, 1940. pp. 1–996.

REHDER, A. 1949. Bibliography of Cultivated Trees and Shrubs. Jamaica Plain, Massachusetts, Arnold Arboretum of Harvard University, 1949. 825 p.

SILVA TAROUCA, E. 1909. Der Pruhonitzer Park (Böhmen). In Die Gartenanlagen Österreich-Ungarns in Wort und Bild. Wien : F. Tempsky, 1909, 1: 31–58.

SVOBODA, A. M. 1965. Dendrologická společnost a Spolková zahrada v Průhonících. In Zprávy botanické zahrady ČSAV Průhonice, 1965, č. 1, s. 39–50.

SVOBODA, A. M. 1976. Introdukce okrasných jehličnatých dřevin. Studie ČSAV, Praha : Academia, 1976, č. 5, 122 s.

SVOBODA, A. M. 1981. Introdukce okrasných listnatých dřevin. Studie ČSAV, Praha : Academia, 1981, č. 12, 175 s.

SVOBODA, P. a i. 1966. Botanická zahrada ČSAV v Průhonících. Vznik, vývoj a dnešní stav. In Zprávy botanické zahrady ČSAV Průhonice (část jehličiny), 1966, č. 2, 175 s.

SVOBODA, P. a i. 1967. Botanická zahrada ČSAV v Průhonících. Vznik, vývoj a dnešní stav. In Zprávy botanické zahrady ČSAV Průhonice (část listnáče), 1967, č. 3, 277 s.

TÁBOR, I. 1987. Historické doklady o introdukci dřevin do zámeckého zahradnictví v Červeném Hrádku u Chomutova. In Symposium 60 let zahradnického výzkumu v Československu, sborník posterů. Průhonice : Výzkumný a šlechtitelský ústav okrasného zahradnictví, 1987. s. 113–123.

TÁBOR, I. 1987. Historické doklady o počátcích introdukce u nás. In Sborník referátů ze symposia k 40. výročí Vysokého zahradnického učení „Zahradnictví do 3. tisíciletí“. Brno : VŠZ, 1987. s. 271–284.

TÁBOR, I. 1991. Historické doklady o počátcích introdukce v Lednici na Moravě a Orlíku. In Parky jižních Čech-evropské a krajinářské parky – Červený Dvůr. Sborník příspěvků z konference. České Budějovice : ČSVTS, 1991. s. 136–143.

TÁBOR, I. 2013. Matrika rostlin Dendrologické společnosti – významný dokument o historii introdukce dřevin do Čech – jehličnany. In Acta Pruhoniana, 2013, č. 105, s. 23–48.

TÁBOR, I. 2014. Přínos Wilsona, Vilmorina a Sargenta na introdukci dřevin do Průhonice. In Acta Pruhoniana, 2014, č. 108, s. 89–103.

TÁBOR, I. – Šantrůčková, M. 2014. Významný historický doklad o introdukci dřevin v Červeném Hrádku a Nových Hradech. In Acta Pruhoniana, 2014, č. 107, s. 45–60.

The Plant List. [cit. 2014-08-12] Dostupné na <<http://www.theplantlist.org>>.

