

The Balkan collections in the main Czech herbaria

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Received: February 07, 2010 ▷ Accepted: May 31, 2010

Abstract. According to *Index Herbariorum* (Holmgren & Keuken 1974), four Czech herbaria (PRC, PR, BRNM, BRNU) have a total of ca. 5 620 000 specimens of vascular plants. The proportion of specimens from the Balkan Peninsula is estimated as 15–20 % of the amount cited. The large collections of Beck, Velenovský and Rohlena comprise ca. 170 000 specimens. The number of type specimens of Balkan endemic plant species, or species characteristic of the Balkan flora, is estimated to be between four and five hundred, although, some of these type specimens are not explicitly indicated as type material. Most type specimens are in the collections of Waldstein, Velenovský and Beck. From a geographical aspect, the Balkan collections in the four main Czech herbaria cover Bosnia and Hercegovina, Montenegro, southern Serbia and Bulgaria to some extent. Less well represented is Croatia, and the Republic of Macedonia, and poorly represented are Albania and Greece. From a historical viewpoint, most of the Balkan collections in Prague and Brno originate from the period 1878–1914. Some detailed information on important collections and relevant species are provided.

Key words: Balkan flora, collections, collectors, Czech herbaria, type material

Introduction

While Czech, or generally Central European, territories were highly explored and treated in depth by western botanists, the Balkan area was to a large extent, underexplored during the 18th and 19th centuries. However, the area promised “cheap and easy profiteering” in terms of floristics and discovery of new species. The Alps and western Europe were crowded by western botanists and there was hardly any chance to discover anything new. The relative ease of understanding the rather similar Slavonic languages also favoured Czech collectors.

Most of the historical collections belong to the period 1878–1938. The question must be asked, why did botanists from the Austro-Hungarian Empire come to the Balkan Peninsula?

After the Congress of Berlin (1878), several political and economic changes had occurred and new situations and possibilities have evolved. The most important political changes were the establishment of Bulgaria as an independent state and the Austrian occupation of Bosnia and Hercegovina. Whilst in the Austro-Hungarian Empire, more than 90 % of the population were literate due to compulsory school education introduced in the 18th century, in the Turkish Ottoman Empire over 90 % of the population were illiterate. Many new schools arose in these lands after 1878 and many teachers who originated from the Austro-Hungarian Empire came to the above mentioned Balkan countries to make a new life. Last but not least, the building of new railways and their expansion opened up communication and was an important factor related to the early exploration of Balkan flora at the end of the 19th century.

Herbaria and collections

The following **four** main Czech herbaria contain large historical collections of the Balkan flora including important type material:

PRC = Herbarium of the Botanical Department of the Faculty of Science of Charles University in Prague (Herbarium Instituti Botanici Universitatis Carolinae), established since 1775; at present with a total of ca. 2 200 000 specimens. Most valuable material and largest in numbers from the Balkan Peninsula (up to 20 %, thus more than 300 000) collected by Beck, Velenovský, Rohlena, Novák, Sieber, Malý, Fiala, Brandis, Degen, Szyszylowicz, Pantocsek, Pančič, Weiser, Vukotinič, Adamović, Marek, Hadinec and others (Jiří Hadinec pers. comm.).

PR = Herbarium of the National Museum in Prague, Department of Botany, established since 1818; presently with a total of ca. 2 000 000 specimens; large collections from the Balkan Peninsula by Vandas, Waldstein, Weber, Sillinger, Sieber, Čelakovský, Formánek, Schlosser, Rohlena (in part), Vukotinič, Pančič, etc.

BRNM = Herbarium of the Botanical Department of the Moravian Land Museum, since 1818; presently with ca. 900 000 specimens. Important collections from the Balkan Peninsula number ca. 70 000 specimens, including those from Freyn and Formánek.

BRNU = Herbarium of the Masaryk University Brno, established since 1921; presently with ca. 560 000 specimens. Important collections by Vandas, Širjajev, Nábělek and others.

Important collections in the Czech Republic (sequence of botanists is approximately in chronological order)

STERNBERG, Caspar Maria Graf von

*January 06, 1761, Prague (CZ) – †December 20, 1838, Castle Březina near Radnice (CZ, Western Bohemia)

Sternberg was the founder (1818) and first president of the National Museum, Prague. He donated his huge private collections to the Museum including a large herbarium which formed the basis of the collections of the Botanical Department of the Museum. Sternberg never visited the Balkan Peninsula but in his herbarium there are specimens collected in the Balkan countries by other contemporary botanists.

His friend Waldstein named the genus *Sternbergia* Waldst. & Kit. (*Amaryllidaceae*) in his honour.

WALDSTEIN-WARTEMBERG, Franz Adam Graf von

*February 26, 1759, Vienna (A) – †May 24, 1823, Horní Litvínov (Oberleutensdorf) (CZ)

Together with Pál Kitaibel, Waldstein travelled extensively in historical Hungary, including some parts of the Balkan Peninsula (Croatia). He financed the production of the illustrious work, Waldstein-Warttemberg & Kitaibel (1799–1812): “*Descriptiones et Icones Plantarum Rariorum Hungariae*”, Vienna which was published in 3 volumes.

Herbarium Graf Waldstein, deposited in the Department of Botany of the National Museum in Prague (PR) has ca. 10 000 specimens, including 136 types (lectotypes) directly related to the iconographical work previously mentioned. Herbarium Kitaibel is deposited in Budapest (BP) and also contains lectotype material. The complete list of type specimens is published by Chrtek & Skočdoplová (1982).

Waldsteinia (*Rosaceae-Potentilloideae*) was named by Willdenow in honour of Count Waldstein. *Vinca herbacea* Waldst. & Kit., *Achillea setacea* Waldst. & Kit., *Euphorbia virgata* Waldst. & Kit., *Glechoma hirsuta* Waldst. & Kit. are examples of plants named by him.

SIEBER, Franz Wilhelm

*March 30, 1789, Prague (CZ) – †December, 17, 1844, Prague (CZ)

Sieber was a passionate collector, traveller and explorer. Heeding the advice of Caspar Graf von Sternberg, he prepared for sale “*Centuria*” (sets of hundred species each) of herbarium specimens of the Bohemian flora from 1813 onwards. During 1817–1819 he conducted journeys in Crete, Egypt and the Holy Land. In 1822–1824 he travelled round the world and submitted for sale plant collections mainly from Australia and South Africa.

He planned to create an Institute for Natural History Exploration of the World and financed some journeys of other explorers in order to obtain collections of new plants from Trinidad, Martinique, Mauritius, etc. Later in life he suffered from a mental disorder and spent 14 years (1830–1844) in a mental asylum in Prague.

The collections, which are in Prague Herbaria **PR** and **PRC**, include plants from Crete. An estimate of the number of Sieber’s specimens held at PR and PRC is ca. 20 000. Other parts of his collection are in different herbaria worldwide; a greater part of his collections was confiscated and sold to pay off his debts. The

collections of Sieber contain many plants described by himself or by other botanists as taxa new to science. *Cytisus ramentaceus* Sieber 1822 (syn. *Petteria ramentacea* (Sieber) C. Presl 1845) is one such example from the Balkans. The type is kept at **PRC**. This is the first new species described from the territory of Montenegro (Crna Gora).

Examples of plants named in his honour include *Crocus sieberi* J. Gay and *Mertensia sieberi* C. Presl.

FREYN, Josef Franz

*December 07, 1845, Prague – †January 16, 1903, Prague (CZ)

Freynd was superintendent of the Austrian Imperial and Royal Railways. Freynd's own collections from the Balkan Peninsula concern only the Istrian Peninsula. Although he was self-taught in botany, Freynd achieved an outstanding expertise so other botanists sent their collections to him for identification, among them Bornmüller, Sintenis, Manissadjian, Hartmann and Litwinow.

The very valuable herbarium of J.F. Freynd comprises ca. 15 000 specimens, including numerous types. After Freynd's death it was bought by the Moravian Land Museum in Brno (herbarium **BRNM**) for CZK 10 000.

Dianthus freynii Vandas was named in his honour and *Ranunculus sintenisii* Freynd, among others, described by him.

FORMÁNEK, Edvard

*April 07, 1845 Klatovy (CZ) – †August 09, 1900, Athos (GR)

Formánek was professor in the grammar school (Gymnasium) in Brno. He published an important botanical contribution, "*Flora of Moravia and Austrian Silesia*". He travelled extensively throughout the Balkan Peninsula, due to his profession mostly during the summer vacations. His itinerary includes:

1. 1887: Slavonia, Bosnia and Hercegovina (Sisak, Banja Luka, Doboj, Mostar, Trebinje, Kotor).
2. 1888: Bosnia and Hercegovina (Bihać, Jajce, Travnik, Sarajevo, Mostar, Foča)
3. 1889: Serbia, Macedonia, Thessalia, Epiros (Niš, Skopje, Thessaloniki, Meteora, Pindos Mts).
4. 1890: Bulgaria (Plovdiv, Karlovo), Turkey, Thracia, Bythinia (Istanbul, Bithynian Olympus).
5. 1891: Macedonia, Serbia (Bitola, Perister Mts, Lake Prespa, southern Serbia).
6. 1892: Bulgaria (Sofia, Mt Vitosha), Serbia (Aleksinac, Leskovnik, Ozren).

7. 1893: Macedonia (Bitola, Ohrid, Kruševo, Mts Perister and Baba).
8. 1894: Kerkyra (Korfu), Epiros (Preveza, Ioannina), Albania (Durrës).
9. 1895: Greece (Thessaloniki, Mts Pelion, Pindos, Olympos) and Serbia (Mali Jastrebac)
10. 1896: Greece (Mts Pindos, Olympos, Ossa, Pelion).
11. 1897: Serbia (vicinity of Belgrade) and Bulgaria (Rodopi Mts, Midzhur in Stara Planina Mts).
12. 1898: Greece and northern Macedonia (Thessaloniki, Mt Kajmakčalan, Bitola, Ohrid, vicinity of Gevgelija).
13. 1900: northern Greece.

Herbarium Formánek contains ca. 40 000 specimens; it is deposited in the herbarium of the Moravian Land Museum in Brno (**BRNM**). A complete catalogue of the plants, with a critical revision of the identifications, was published in 1909 by Karel Vandas as "*Reliquiae Formánekianae*" (Fig. 1). When it was published, Romuald Formánek wrote a booklet to defend his brother Prof. Dr Edvard Formánek. There, he accused Vandas of tarnishing the memory of E. Formánek by criticizing his determination of plants. Vandas was forced to explain in a separate booklet why he changed some of Formánek's erroneous identifications.

The Bulgarian findings of Formánek were also hugely ignored by Josef Velenovský, the author of *Flora Bulgarica* partly because Formánek's determinations were so unreliable.

Edvard Formánek is buried in Dafni on the Athos peninsula in Greece. Besides other plants, a large and

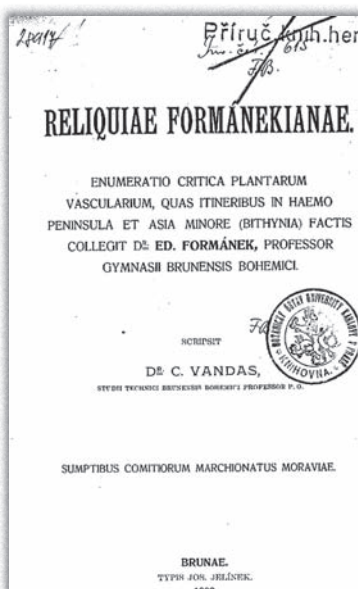


Fig. 1. Reliquiae Formánekianae: complete catalogue as revised by Vandas.

beautiful bellflower was named in his honour, *Campanula formanekiana* Degen & Dörfler.

VANDAS, Karel

*October 21, 1861, Tuháň ný Slaného (CZ) – †September 14, 1923 Skopje (Republic of Macedonia)

Vandas was assistant to Prof. Čelakovský at the Department of Botany in the National Museum in Prague. In 1906 he became professor at the Technical University in Brno and, until 1909, Director of the Department of Botany of the Moravian Land Museum.

During the period between 1887 and 1923 he travelled extensively in Bulgaria, Macedonia, Kosovo (1914), Bosnia and Hercegovina. According to unconfirmed reports, he was shot to death by an unknown assailant in 1923 during a quarrel over a Macedonian woman.

Vandas bought the herbarium of Freyn, which had a large amount of type material, for the Moravian Museum (see entry under Freyn). He also carefully revised the large herbarium of Formánek, sacrificing five whole years of his life to this work, “*Reliquiae Formánekianae*”. He described several new taxa from the Balkans, e.g., *Dianthus freynii* Vandas. Some other species bear his name – *Dianthus vandasii* Velen. and *Achillea vandasii* Velen.

The personal herbarium of Vandas is very large and comprises ca. 80 000 specimens. The greater part is deposited at **PR** with a smaller part in **BRNU**.

VELENOVSKÝ, Josef

*April 22, 1858, Čekanice ner Blatná (CZ) – †May 07, 1949, Mnichovice near Prague (CZ)

Velenovský was professor of botany in Charles University, Prague from 1898 until 1927 (almost 30 years). His botanical work has been described in detail by Petrova (1996). He made six journeys to Bulgaria between 1884 and 1897. In 1887 he travelled together with Karel Vandas and in 1889 together with Hermenegild Škorpil (see entry under Škorpil).

His most important work is “*Flora Bulgarica*” (1891) and its “*Supplementum I*” (1898). It contains 2542 species including 158 newly described species. The Flora (including the *Supplementum*) contains 2877 species from Bulgaria. For comparison, the Bulgarian flora written by Stojanov and Stefanov (1924, 1925) contains 2957 species.

Many Czech and Bulgarian persons collected plants for Velenovský, among them Stříbrný, Škorpil,

Mrkvička, Urumov, Baev, Kovachev, Toshev, Davidov, Paskalov, Milde, Reis, Jablonowski and Lukáš. Velenovský gathered a very large herbarium of Bulgarian plants containing ca. 50 000 specimens including a large amount of type material. Because eminent botanists such as Pančić and Bornmüller had sent plants collected in Bulgaria to Velenovský for determination, we can also find very valuable specimens among the material kept by Velenovský. His herbarium is today deposited in Prague University Herbarium (**PRC**).

According to Petrova (1996) a large number of taxa described by Velenovský were reduced to synonymy, but of the 82 species still recognized, he is the main nomenclatural author, e.g., *Primula deorum* Velen., *Seseli rhodopeum* Velen., *Achillea thracica* Velen., *Koeleria nitidula* Velen., etc.

Velenovský did not trust most other botanists. That was why he completely ignored the Bulgarian material collected by Formánek in 1890 and 1892. The same was with the Hungarian botanist Árpád von Degen.

STŘÍBRNÝ, Václav

*April 25, 1853, Lidice (CZ) – †June 08, 1933, Sofia (BG)

Stříbrný studied pomology in Prague and later worked as castle-gardener for a count in Middle-Bohemia. In 1883 he was invited by the government of Eastern Rumelia (now southern part of Bulgaria) to be a teacher and horticulturist in the new school at Sadovo near Plovdiv. The invitation was originally meant for three years but Stříbrný spent the rest of his life in Bulgaria, ca. 50 years! Stříbrný had expert knowledge of the Bulgarian flora and collected up to 20 000 specimens which are deposited partly in Bulgaria (SOM) and partly in PRC as a part of the herbarium of Velenovský. Stříbrný accompanied the Bulgarian Emperor Tsar Ferdinand on botanical excursions several times and was honoured by the emperor with an order conferred for life-time work in Bulgarian education. Josef Velenovský named many plants in his honour, e.g., *Fritillaria stribrnyi* Velen., *Alkanna stribrnyi* Velen., *Saxifraga stribrnyi* (Velen.) Podp.

ŠKORPIL, Hermenegild (Fig. 2)

*February 08, 1858, Vysoké Mýto (CZ) – †June 25, 1923, Varna (BG)

Škorpil lived in Bulgaria from 1879 together with his brother Karel. He did much for archaeological and geological research in Bulgaria. He helped Velenovský for many years, sending him large amounts of valuable



Fig. 2. Placard at the house in Vysoké Mýto (CZ) where Škorpil was born.

herbarium material of Bulgarian plants. It was Škorpil who discovered the occurrence of *Rhododendron ponticum* in Bulgaria. Velenovský named some taxa in honour of him, e.g., *Silene škorpilii* Velen.

Both Stříbrný and Škorpil belong to the so-called cultural colonisation of Bulgaria by Czech natives after 1878. The Czech workers did not only occupy important positions in the new Bulgarian state but also fought for Bulgaria during the wars. Jan Mrkvička was another helper of Velenovský; he died as a soldier in the Bulgarian army on 17 August 1916 during the Serbian offensive in Macedonia (Požarevski rid).

BECK, Günter von Mannagetta und Lerchenau

*August 25, 1856, Bratislava (SK) – †June 23, 1931, Prague (CZ)

Beck was formerly professor of botany in Vienna University. In 1899 Professor Wettstein moved from Prague to Vienna, and Beck became director of the Botanical Institute of the Prague German University (at that time Prague University was divided into a Czech University and a German University).

Beck travelled extensively in Dalmatia, Bosnia and Hercegovina (earliest journeys between 1892 and 1896) and during that period he gathered a huge herbarium of Bosnian and Hercegovian plants. This is now the largest collection of Balkan plants in a Czech herbarium (PRC – up to 100 000 specimens!). Between 1903 and 1927 he published “*Flora of Bosnia and Hercegovina*” (Flora Bosne i Hercegovine i Novopazarskog Sandžaka) in three volumes (which is incomplete), in Belgrade and Sarajevo. He described many new taxa such as *Saxifraga prenja* Beck; other botanists also named his new collections after him, e.g., *Viola beckiana* Fiala.

ROHLENA, Josef (Fig. 3)

*January 03, 1874, Přepychy (CZ) – †January 26, 1944, Prague (CZ)

Rohlena was a teacher in Bohemian schools from 1894 until 1931. Being one of the foremost experts in the Balkan flora he organized floristic research in Bohemia for many years. He made six journeys to Montenegro (Crna Gora) during the summer vacations of 1901–1906. His colleague and assistant in Montenegro was Krsto Popov Pejović from Njeguši, who continued collecting plants for him after 1906. Rohlena determined Balkan plants collected by other botanists like Vandas, Hrubý, Jirásek, Martinec, Sillinger and Deyl during a long and productive period lasting ca. 40 years.

His masterpiece is the “*Conspectus florae Montenegroinae*” (1942), until now the chief publication on the flora of Montenegro.



Fig. 3. Placard of J. Rohlena.

Other Balkan collections in Czech herbaria

Čelakovský, L.F. jun.: *1864, Prague (CZ) – †1916, Prague (CZ)

Dalmatia, PR, ca. 3000 specimens.

Dostál, J.: *1903, Prague (CZ) – †1998, Prague (CZ)
Montenegro, PRC.

Klásterský, I.: *1901, Prague (CZ) – †1979, Prague (CZ)
Macedonia (together with Deyl, M.: *1906 – †1985),
PR, ca. 10 000 specimens.

Nábělek, F.: *1884, Kroměříž (CZ) – † 1965, Uherské hradiště (CZ)

Balkans, Turkey and Iraq, BRNU and Bratislava.

Novák, F.A.: *1892, Chotěbuz (CZ) – †1964, Prague (CZ)

Serbia (Zlatibor), Sandžak, PRC, ca. 7000 specimens.

Polívka, J.: *1893, Hlinsko (CZ), †?

Dalmatia, his specimens are part of Herbarium Rohlena, **PRC**.

Schlosser, J.: *1808, Jindřichov near Hranic (CZ) – †1882, Zagreb (HR)

Croatia, **PR**, *ca.* 5000 specimens, probably more in Zagreb and Vienna.

Sillinger, P.: *1905, Skalica (SK) – †1938, Brno (CZ)

Bosnia, Hercegovina, Serbia, Montenegro, **PR**, *ca.* 5000 specimens.

Suza, J.: *1890 Třebíč (CZ), †1951 Prague (CZ)

Lichens in Balkan Peninsula, deposited in **PRC**, **PR**, **BRNM**, **BRNU**.

Širjajev, G.I.: *1882, Charkov (Ukraine) – †1954, New York (USA)

Balkan Peninsula, **BRNU**.

Weber, F.: *1903, Brodek near Přerova (CZ) – † unknown

Macedonia, 1938, **PR**, *ca.* 2650 specimens.

In more recent years

Šída, O. & Hadinec, J.: Montenegro, 2001, **PR**, **PRC**, *ca.* 1500 specimens.

Marek, M.: Greece, 1993–2001, **PR**, **PRC**, *ca.* 3000 specimens.

There are also specimens (including isotypes) within the listed larger collections (mostly held at PR and PRC) from Adamović, Malý, Fiala, Brandis, Degen, Szyszylowicz, Pantocsek, Pančić, Reiser, Vukotinović, etc.

Acknowledgements. We thank Kit Tan for linguistic improvements and editing the text and Jiří Hadinec, curator of herbarium PRC for much valuable information concerning the material there.

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