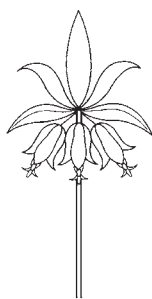


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The “Botanische Reiseverein” — A 19th-century joint stock company for the collecting of herbarium specimens

Arno Wörz

Abstract

The “Unio Itineraria,” or “Botanische Reiseverein,” was a 19th-century joint stock company exclusively founded to send botanists on travels to collect herbarium specimens. This paper describes its founders, the travelers and their fates, the labels of the herbarium specimens, and the impact this organization had on botanical research from the 1820s to the 1850s. Specimens of the Reiseverein are extant in nearly every large European and North American herbarium, and many of them are types. The material originates from such areas as North Africa, Ethiopia, Arabia, Spain, Portugal, the Juan Fernandez Islands (Chile), and the United States. A list of the members of the Reiseverein, a list of the travelers, and an estimate of the number of the species and specimens collected are presented. The structure and operations of the Reiseverein, the reasons for its decline, and its impact on the botany of the 19th century are discussed.

Introduction

In many European and North American herbaria, specimens can be found with printed labels carrying the exsiccata names *Unio Itineraria*, *Unio itiner.*, *Unio itin.*, *U.J.* or *U.i.* Most date from the 1820s into the 1840s. Among these collections are many types, collected by such renowned investigators as Schimper, Welwitsch, and Kotschy. Many curators, however, know little about this material or its origins.

These specimens were distributed by a society created for the sole purpose of sending botanists on journeys to collect herbarium material. The Botanische Reiseverein was based in Esslingen, a picturesque medieval town now

nearly a suburb of Stuttgart, in southwestern Germany. Esslingen, following the loss of its relative independence with the dissolution of the German Empire in the 1810s, was then part of the newly founded kingdom of Württemberg. A remarkable interest in the sciences and specifically in botany was the driving force for the foundation of the Reiseverein by Ernst Gottlieb Steudel (1783–1856) and Christian Ferdinand Hochstetter (1787–1860), who would later become its directors.

This paper will present the most essential facts about the Reiseverein that are important in helping herbarium users and curators understand the background of this material.

Karl Baur (1900–1971), curator at the herbarium of the State Museum of Natural History at Stuttgart (STU), was the first to study the Reiseverein. A part of this paper is a concise excerpt of Baur (1970) with some corrections and additions. Another part is based on the evaluation of contemporary literature (e.g., announcements of Hochstetter and Steudel concerning the Reiseverein) and archival material (i.e., letters of Steudel)—dispersed, difficult to find, difficult to study, and all in German. An estimate of the numbers of specimens distributed based on the figures of Hochstetter’s and Steudel’s announcements will be presented. A list of the members of the Reiseverein will enable curators to trace material they find in their herbaria. Finally, the scientific impact of this remarkable society on botanic research in the first half of the 19th century and the reasons for its decline and dissolution after 1840 are discussed.



Figure 1. Christian Ferdinand Hochstetter.
© Württembergische Landesbibliothek, Stuttgart,
photo by Joachim Siener.

A short history of the Reiseverein

The founders

Christian Ferdinand Hochstetter (1787 Stuttgart–1860 Reutlingen, Fig. 1) studied theology at the University of Tübingen and was later ordained a Lutheran minister. After some years in Erlangen, Berlin and Nuremberg, he became the minister and director of a Protestant school at Brno (Brünn) in Moravia. During his eight-year stay at Brno, Hochstetter began his botanical work (Hrabetová-Uhrová 1970). In 1824 he returned to Württemberg and accepted the position of senior teacher at a teacher's college in Esslingen. Shortly after his arrival, he became inspired with the idea of a "Reiseverein," and, in partnership with E. G. Steudel, this idea became reality in 1827.

Hochstetter lived in Esslingen until his death in 1860. He published many papers about the material collected by the travelers of the Reiseverein and described many species, some of them in collaboration with Steudel. For a concise biography, see Habacher (1970) and Kurr (1861); for an autobiography, see Hochstetter (1859). Hochstetter sold most of his Brno herbarium in 1824 to support his move to Esslingen. His later herbarium was acquired by the University of Tübingen, where it resides today as part of the main herbarium (TUB). It contains a nearly complete set of duplicates of the material distributed by the Reiseverein.

Ernst Gottlieb Steudel [later: von Steudel] (1783 Esslingen–1856 Esslingen, Fig. 2) was a physician and plant enthusiast. After his studies in medicine and natural history at the University of Tübingen, he traveled to Switzerland, Vienna and Halle, eventually returning to Esslingen. In 1821 and 1824 he published his *Nomenclator Botanicus* (Steudel 1821–1824), which may be regarded as a predecessor of the *Index Kewensis*, or today's IPNI. In 1826 the *Enumeratio Plantarum Germaniae Helvetiaeque Indigenarum* followed, which he edited with Hochstetter. Steudel was probably the initiator and the main promoter of the Reiseverein. The material brought back by the travelers was treated in the second edition of his *Nomenclator* (Steudel 1840–1841).

In 1835 Steudel sold his herbarium to Henry Barron Fielding (1805–1851) (Stafleu and Cowan 1985b, 5:907), who was called a "rich Englishman" in Habacher (1970). This material today is at OXF. Like Hochstetter, Steudel continued to collect, and this material is now at P and PC (Stafleu and Cowan 1985b). In 1855 he published the *Synopsis Plantarum Glumacearum*, where he revised the Gramineae, Cyperaceae and Juncaceae (Steudel 1855). For a more detailed biography, see Kurr (1857).

The organization

In the preface to Ecklon’s publication (Ecklon 1827), Hochstetter and Steudel wrote about their motives for founding the Reiseverein. Along with supporting research in natural history and the discovery of new species, their specific goal was to make available the “objects of nature” (*Naturgegenstände*) as common goods to all those interested in science, instead of having access be limited to the small circles of investigators in museums or to the “rich and great” (*Reichen und Großen*). In other words, the study of nature should be accessible to not only wealthy aristocrats, like Lamarck, Banks or the de Candolles, but also to all interested persons. This attitude is similar to that of the French encyclopedists (D. Diderot) and their ideas in the second half of the 18th century preceding the French Revolution.

In 1825 Hochstetter and Steudel launched an appeal in a regional agricultural journal (Hochstetter and Steudel 1825; see also Baur 1970) for the founding of the Reiseverein. In April 1826 an independent leaflet was published and sent to interested persons, one copy of which is extant in the STU archive (Fig. 3). It is in Latin and intended for an international scientific public. The original aim was to collect as many duplicates as possible of herbarium specimens, living plants, and seeds. Later fossils, minerals (collected mostly by Kurr) and mollusk shells were included. The material was to be distributed among the members in proportion to the amount of money they had invested. The minimum was 15 Rhenish florins (*Gulden Rheinisch*), a figure mentioned in nearly all of Hochstetter’s and Steudel’s publications about the Reiseverein. The subscription was later raised to around 30 florins. The members were called “shareholders” (*Aktionäre*), and they owned equity in the form of “shares” (*Aktienanteil*). One share would entitle its holder to at least 200 species.



Figure 2. Ernst Gottlieb Steudel. © Landesmedienzentrum Baden-Württemberg, Stuttgart.

Initially, the name was “Botanischer Reiseverein” (Botanical Travel Society), but around 1827 it was changed to “Naturhistorischer Reiseverein” (Natural History Travel Society). Sometimes the two names were used interchangeably. More or less unofficial were the names “Württembergischer Reiseverein” (Württemberg Travel Society) and “Esslinger Reiseverein” (Esslingen Travel Society). The printed labels of the material distributed bear the Latin name *Unio Itineraria* or its abbreviations (Fig. 4). Reports were published several times in the journal *Flora* from 1826 to 1842.

By 1827 there were 89 members (Hochstetter and Steudel 1827b), some of them famous names in contemporary German botany. A list of the contributors is found in Table 1. In 1828 the society had 116 members holding 145 shares (Hochstetter and Steudel 1828a). For that year, between 200 and 300 plants were promised to each member as dividends (*Dividende*). The society was thus functioning as a joint stock company.

Rei herbariæ amicis omnibus- que naturæ curiosis salutem!

Historiæ naturalis imprimis Botanices provehendæ societatem, cui Unionis itinerariæ nomen dedimus, infra scripti condere ausi sumus. Scilicet huic unioni id est propositum, ut viros, seu juvenes rei botanicæ aliarumque scientiarum naturalium peritos singulos, seu plures quotannis in regiones, provincias et terras, plantarum, animalium et mineralium rariorum copia insignes, ad incrementum scientiæ et colligenda naturæ producta emittat. Qui huic unioni se adscribunt, in commune ærarium, ex quo sumtus itineribus dictis impendendi redimuntur, annuarium (quindecim florenos rhenanos) quotannis contribuunt.

Herbæ vivæ, plantæ exsiccatae, semina, mineralia, animalia, quæcunque denique ex his itineribus redundant, quotannis inter socios unionis æquo modo distribuuntur. Docti viri et naturæ curiosi ex omnibus terris societatis nostræ itinerariæ participes se facere possunt.

Quicumque, misso annuario, societatem hujus instituti intrat, simul declarat, num plantas vivas et semina, an herbas exsiccatas, an utriusque sectionis partem proportionalem exoptet. Cui placuerit, annuarium duplum seu triplex quotannis solvere, potest ad numerum plantarum du-



Figure 3. Leaflet (“flier”) in Latin launching an appeal for the foundation of the Reiseverein (first page). From the archive of the herbarium STU.

The first plant-gathering expeditions occurred in 1826. Altogether 10 botanists were granted money in advance for their travels. The Reiseverein also distributed material from the legacies of Bertero and Frank. Five collectors, Ecklon, Moser, Hohenacker, Lhotsky and Kotschy, sold specimens to the Reiseverein, which then distributed the material to its members.

The sponsors

The Reiseverein needed an initial amount of money for the first expedition, which was Müller and Fleischer’s trip to Sardinia and Istria. Steudel asked the publisher Johann Friedrich

Cotta (1764–1832) for a loan of 300 florin in a letter dated 22 March 1826 and preserved in Cotta’s archive (now in the Schiller National Museum in Marbach am Neckar, Germany). Cotta was one of the most important publishers in contemporary Germany. He published many books of famous writers like J. W. Goethe, F. Schiller or F. Hölderlin, and also Steudel’s *Nomenclator Botanicus*. The loan was a considerable risk because Steudel could not guarantee its repayment; however, Cotta granted the loan and it was repaid in 1827, as recorded in a second letter of Steudel from the same archive (11 July 1827). Cotta became an honorary member of the Reiseverein. This

Welwitschii iter Lusitanicum.
442. Bupleurum fruticosum L.
 In Estremad. transtag. prope Almada
 U. i. 1841. Jul. 1840.

Bupleurum fruticosum *Lin.*
 Unio itineraria Ad sepes in silvis prope
 1827. *Müller.* Laconi Sardiniae. Aug.

Bowlesia? *Dichotoma Pepp.*
 In petrosis calidis collium secus rivulos
 Unio itiner. Rancagua Chilea, 1828. Octbr. *Herb. Bert.*
 1835. nr. 111 et 88.

Asperula longiflora. *W. & K*
 Ad colles prope Lixuri Cephaloniae.
 U. i. d. 29. Oct. 1834. Schimper et Wiest.

Erigenia bulbosa *Nutt.*
 In ditione „Miami“ civitatis Ohio.
 Unio itin. 1835. Dr. Frank.

Vryngium **Cirsium giganteum MB.**
 Unio itiner. 1839. In montibus prope Narganam.
R. F. Hohenacker.

957. *Dactylis*
 Inter lapides altitud. 1 mont. dorsi leonis
 Octbr. U. J. *Ecklon.*
Hb. Seb.

Figure 4. Some printed labels from specimens distributed by the Reiseverein. Note the different abbreviations for Unio Itineraria. All from the herbaria STU and KR.

Table 1. The members of the Reiseverein in 1826. Cited from Hochstetter and Steudel (1827b) and in the same row as in the original paper; translations and additions are in []; their financial contributions are in “Gulden Rheinisch” = Florin Rhenish (fl.) and “Kreutzer” (kr.). The names and biographic details were compiled from Staffeu and Cowan, *Taxonomic Literature, ed. 2* (TL-2); Lehmann (1951); <http://genealogy.euweb.cz/auersperg/auersperg5>; www.nhv-ahnenforschung.de/Biblo2/OrtsgeschichteRST; <http://deposit.ddb.de/cgi-bin/>, [/paderborn.know-library.net](http://paderborn.know-library.net).

A. Ehrenmitglieder [Honorary members]

Fürst Wilhelm von Auersberg [Fürst Karl Wilhelm Philipp Viktor von Auersberg, 1782–1827]	Wlaschin in Bohemia		
Graf von Harrach	Vienna	1826	35.00
Graf von Hoffmannsegg [Johann Centurius Graf von Hoffmannsegg, 1766–1849]	Dresden	1826	19.20
Graf von Sternberg [Kaspar Maria Graf von Sternberg, 1761–1838]	Prague	1826	20.00
Hofrath André	Stuttgart	5 Jahre [5 years]	21.36
Geh. Hofrath von Cotta [Johann Friedrich Cotta, 1764–1832]	Stuttgart	5 Jahre	15.00
Staatsrath von Kiemeyer [Karl Friedrich von Kiemeyer, 1765–1844]	Stuttgart	5 Jahre	15.00
Oberst Baron v. Welden [Franz Ludwig Freiherr von Welden, 1782–1853]	Vienna	5 Jahre	33.00
Die hochlöbliche Zentralstelle des landwirtschaftlichen Vereins	Stuttgart	5 Jahre	15.00
Der landwirtschaftliche Verein in	Kassel	1826	15.00
Der preußische Garten-Verein in	Berlin	5 Jahre	50.00
Das Senkenbergische Institut in	Frankfurt	1826	15.00
Die naturforschende Gesellschaft in	Marburg	1826	30.00
Die ökonomische Gesellschaft in Sachsen	Dresden	5 Jahre	30.00

B. Ordentliche Mitglieder [Regular members]

Pharmaceut Asbach	Aarau	1826	15.00
Pharmaceut Bauer	Berlin	1826	
Professor Dr. Bernhardt [? Johann Jakob Bernhardt, 1774–1850]	Erfurt	1826	15.00
Apotheker Bernhold	Salzburg	1826	16.30

Professor Dr. Besser [Willibald Swibert Joseph Gottlieb von Besser, 1784–1842]	Krzeminicz	1826	15.00
Apotheker Dr. Biosoletto	Triest	5 Jahre	15.00
Apotheker Bilz	Erfurt	1826	15.00
Dr. Bischoff [Gottlieb Wilhelm Bischoff, 1797–1854]	Heidelberg	5 Jahre	15.00
Pharmaceut Blell	Erfurt	1826	15.00
Reg.Rath v. Böninghausen [Clemens Maria Friedrich von Boenninghausen, 1785–1864]	Münster	5 Jahre	15.00
Salinist Brandes [Hofrath Rudolf Brandes]	Salzufflen	1826	30.00
Stud. Med. v. Braun	Heidelberg	1826	15.00
Apotheker Bruch [Phillipp Bruch, 1781–1847]	Zweibrücken	5 Jahre	15.00
Apotheker Dann [Rudolf Heinrich Dann, 1798–1878]	Stuttgart	1826	15.00
v. Dannenfeld [Joseph Claudius Pittoni, Ritter von Dannenfeldt, 1797–1878]	Vienna	1826	15.00
Professor Decandolle [Augustin Pyramus de Candolle, 1778–1841]	Geneva	1826	27.30
Apotheker Demmler [Carl Ludwig August Demmler, 1793–1868]	Stuttgart	1826	15.00
Duby [Jean Étienne Duby, 1798–1885]	Geneva	1826	27.30
Dunant	Geneva	1826	27.30
Fischer	Nixdorf in Bohemia	5 Jahre	15.00
Fischer	Putenhammer in Bohemia	5 Jahre	15.00
Reg. Rath Frank	Frankfurt a.d. Oder	5 Jahre	30.00
Med. Rath v. Frölich [Joseph Aloys von Froelich, 1766–1841]	Ellwangen	5 Jahre	15.00
Dr. Gärtner [Carl Friedrich von Gaertner, 1772–1850]	Calw	5 Jahre	30.00
Apotheker Grabowsky [Heinrich Emmanuel Grabowski, 1792–1842]	Oppeln	5 Jahre	30.00
Godet	Krzmirnicz	1826	15.00
Dr. Günther	Breslau	5 Jahre	15.00
Apotheker Gräf	Weißenfels	1826	15.00
Pharmaceut Hausleutner	Franckenstein	1826	9.40

Dr. Hentschel	Breslau	5 Jahre	15.00
Apotheker Hering [Karl Hering, 1796–1843]	Stuttgart		
Professor Hinterhuber [Julius Hinterhuber, 1810–1880 or Rudolf Hinterhuber, 1802–1892]	Salzburg	1826	16.30
Professor Hochstetter [Christian Ferdinand Hochstetter, 1787–1860]	Eßlingen	5 Jahre	30.00
Apotheker Hochstetter	Pappenheim	1826	15.00
Buchhändler Hofmeister	Dresden	1826	15.00
Professor Hooker [William Jackson Hooker, 1785–1865]	Glasgow	5 Jahre	30.00
Professor Dr. Hoppe [David Friedrich Hoppe, 1760–1846]	Regensburg	1826	15.00
Advokat Jürgens [Georg Heinrich Bernard Jürgens, 1771–1846]	Jever	1826	15.00
Pharmaceut Keßler	Ulm	5 Jahre	15.00
Apotheker Knippe	Torgau	1826	15.00
Professor Dr. Koch [Wilhelm Daniel Joseph Koch, 1771–1849]	Erlangen	5 Jahre	15.00
Pfarrer Köberlein	Grünenwald	5 Jahre	15.00
Pharmaceut Kurr [Johann Gottlob Kurr, 1798–1870]	Stuttgart	1826	15.00
Apotheker Lasson	Schaffhausen	1826	15.00
Apotheker Lucá [August Friedrich Theodor Lucae, 1800–1848]	Berlin		
Registrator v. Martens [Georg Matthias von Martens, 1788–1872]	Stuttgart	5 Jahre	15.00
Hofrath v. Martius [Carl Friedrich Philipp von Martius, 1794–1868]	Munich	5 Jahre	15.00
Mercier [Marie Philippe Mercier, 1781–1831]	Geneva	1826	27.30
Professor Mertens [Franz Karl Mertens, 1764–1831]	Bremen	1826	15.00
Apotheker Mieg	Basel	1826	15.00
Professor Nees von Esenbeck [Theodor Friedrich Ludwig Nees von Esenbeck, 1787–1837]	Bonn	1826	15.00
Apotheker Oswald	Arnstadt	5 Jahre	15.00
Pharmaceut Preus [Carl Gottlieb Traugott Preuss, ?–1855]	Frankenstein in Silesia	1826	19.20
Banquier Pfeiffer [Louis Karl Georg Pfeiffer, 1805–1877]	Kassel	1826	15.00

Kreis-Einnehmer Rabe	Halle	1826	15.00
Pharmaceut Rampold	Stuttgart	1826	15.00
Professor Dr. Reichenbach [Heinrich Gottlieb Ludwig Reichenbach, 1793–1879]	Dresden	1826	15.00
Amtmann Rodig	Stolpen	5 Jahre	15.00
Apotheker Rieck	Torgau	1826	15.00
Legationsrath Roser	Stuttgart		
Apotheker Röstel	Landsberg	5 Jahre	30.00
Stud. Pharmac. Schröder	Jena	1826	15.00
Direktor v. Schrank [Franz von Paula von Schrank, 1747–1835]	Munich		
Präsident v. Schlechtendahl [Diedrich Friedrich Carl von Schlechtendahl]	Paderborn	1826	15.00
Land-G.A. Schnitzlein [Landgerichtsarzt Karl Friedrich Christoph Wilhelm Schnitzlein, 1780–1856]	Mannheim*	5 Jahre	15.00
Professor Schübler [Gustav Schübler, 1787–1834]	Tübingen	1826	20.00
Garten-Direktor Schultes	Zür[ch]	1826	15.00
Apotheker Stein	Frankfurt am Main	1826	15.00
Dr. Steudel [Ernst Gottlieb Steudel, 1783–1856]	Eßlingen	5 Jahre	30.00
Pharmaceut Struve	Stuttgart	1826	15.00
Talbot	London	1826	15.00
Professor Treviranus [Ludolph Christian Treviranus, 1779–1864]	Breslau	1826	15.00
Ober Medicinal-Assessor Wild	Kassel	1826	15.00
Garten-Director Zeiher [Johann Michael Zeyher, 1770–1843]	Schwetzingen	1826	
Apotheker Zeller [Gottlob Heinrich Zeller, 1794–1864]	Nagold	1826	15.00

* Mannheim is probably a misprint. Schnitzlein lived at Monheim in Bavaria.

loan granted by Cotta secured the start of the Reiseverein, and the first specimens could be, although delayed, distributed. Steudel asked in his second letter for remuneration for “diese unbemittelten jungen Männer” (these destitute young men) Fleischer and Müller.

Later, support came from the King of Württemberg and the Grand Duke of Baden,

both of whom sponsored the joint journey of W. Schimper and A. Wiest to Arabia and Abyssinia from 1834 (Hochstetter and Steudel 1834, 1835b, 1836). The financial contribution of the King of Württemberg was 1000 florin for A. Wiest (Hochstetter and Steudel 1834). This journey was delayed, unfortunate and much more expensive than expected.

The travelers

The travelers are listed in alphabetical order. As mentioned in the introduction, the material is dispersed over many collections worldwide. Some herbaria in southern Germany, the region where the Reiseverein was based, hold a considerable number of specimens and are cited as examples. For further details, see *Index Herbariorum, Part II, Collectors* and Stafleu and Cowan, *Taxonomic Literature, ed. 2*, the references of which are included in the list below.

Bertero, Carlo Giuseppe (1789 Santa Vittoria d'Alba–1831 at sea, Fig. 5), born in Italy, studied medicine and natural history at Turin and worked first in Piedmont. He then went to South America, first to the Antilles and Colombia (1816–1821), and, after a stay in Europe and some work on Sardinia (Urban 1902), went back in 1829 and collected in Chile and on the Juan Fernandez Islands. In 1830 he sailed to Tahiti, and on the way back to Chile his ship was lost at sea. His herbarium material from Chile and the Juan Fernandez Islands was acquired by the Reiseverein from Delessert's heirs for 1200 francs (Urban 1902, p. 22) and offered for distribution in 1835 (Hochstetter and Steudel 1835a). For an excellent, detailed biography, see Delprete et al. (2002). For further details, see Stafleu and Cowan (1976a, 1:201), Stafleu and Mennega (1993, 2:118) and Urban (1902, pp. 21–23). Specimens are at TUB and STU.

Ecklon, Christian Friedrich (1795 Apenrade, Schleswig–1868 Cape Town) lived in Cape Town, South Africa, from 1823. Together with K. L. P. Zeyher (1799–1858), he collected plant material in South Africa and sold it to the Reiseverein. While Zeyher intensively collected in Namaqualand and Orange River region, Ecklon traveled in the Cape region and along the South Coast. In 1828 Ecklon returned to Europe with



Figure 5. Carlo Giuseppe Bertero. Photoengraving by Lallemand, ?1828, from drawing by Sofia Giordano, 1827. Courtesy of Hunt Institute for Botanical Documentation.

his collections, and in the same year about 1,000 species were offered for distribution (Hochstetter and Steudel 1828b); in 1830 several more were announced (Steudel 1830). Ecklon again collected in South Africa from 1829 to 1833, then stayed at Hamburg until 1837 when he eventually returned to Cape Town, where he died in 1868. A list of his species was published in Ecklon (1827) and in Ecklon and Zeyher (1835–1837). For a biography, see Gunn and Codd (1981, pp. 144–147); for the collecting localities, see Gunn and Codd (1981, pp. 388–393) or Drège (1847); for further details, see Stafleu and Cowan (1976b, 1:721–722) and Stafleu and Mennega (2000, 6:254–255).

Endres, Philipp Anton Christoph (1806 Lustenau near Ellwangen–1831 Strasbourg) was sent on three successful journeys to the Pyrenees (1829, 1830, 1831), where he discovered several new species, among them *Endressia pyrenaica* Gay (Umbelliferae) and *Geranium endressii* Gay, both named in his honor. On his first journey he visited the eastern part of the mountains west to the Valle d'Eynes. His second and third voyages in 1830 and 1831 covered the whole Pyrenees and the pine forests of the Landes. Endres died on his return journey in Strasbourg. Gay (1832) spelled in his biography of Endres the name with -ss. Endres himself, however, wrote his name on several herbarium labels with one -s, which is probably the correct spelling. For a detailed biography, see Gay (1832), and for some details, see Stafleu and Cowan (1976c, 1:753). Some material is extant at STU, and many specimens are at NA (from the herbarium of Ferdinand Rugel (1806–1878), acquired by I. C. Martindale (1842–1893), see Meyer and Elsasser 1973).

Fleischer, Franz [later: von Fleischer] (1801 Lausigk in Saxony–1878 Stuttgart-Hohenheim) was a trained pharmacist, and his successful journey to Tyrol in 1825, sponsored by a temporary "joint-stock company" (*Aktiengesellschaft*), was an important stimulus for the foundation of the permanent society (Hochstetter 1826a). His journey to the southeastern Alps (where he was nearly killed by an avalanche) and the eastern Mediterranean resulted in 25,000 specimens for distribution (Hochstetter and Steudel 1827a). From Trieste he went to Illyria, Istria, Greece, Turkey, Syria and Egypt in 1826 and 1827 (Nördlinger 1880). For an obituary with biography, see Nördlinger (1880).

Frank, Joseph C. (1805 Rastatt, Baden–1835 New Orleans), a physician, published a flora of his home town (Frank 1830) and later emigrated to America. He lived at Cincinnati

(Ohio) and collected in southwestern Ohio, the Miami County, the vicinity of Cincinnati, and Germantown (Stuckey 1974). In November 1835 he died from yellow fever at New Orleans, Louisiana. His widow returned to Germany and communicated the collections to the Reiseverein for distribution (Stuckey 1974, p. 264). About 100 species from North America were distributed in 1835 (Hochstetter and Steudel 1835a, b), and later probably several centuriae were offered. See also Lanjouw and Stafleu (1957, (2)2:206); for a biography and type specimens, see Stuckey (1974); for some further details, see Stafleu and Cowan (1976d, 1:871).

For Frank's year of birth, two different years are found in the literature: 1782 and 1805. In a letter from the Badisches Generallandesarchiv (Main State Archive of Baden) to Karl Baur dated 23 April 1968, the age of 22 was stated at his immatriculation at Heidelberg university in 1827. Therefore, 1805 is probably the correct date of birth.

Guthnick, Heinrich Joseph (1800 Thenhoven near Cologne–1880 Bern, Fig. 6), a pharmacist, was later head of the Natural History Museum and the Botanical Garden at Bern. Together with C. Hochstetter, he was sent to Portugal and the Azores in 1838 (Hochstetter and Steudel 1838c, 1839). For a biography, see Fischer (1902); see also Lanjouw and Stafleu (1957, 2(2):246).

Hochstetter, Carl (1818 Brno, Moravia–1880 Vienna), the eldest son of Christian Ferdinand Hochstetter (one of the founders of the Reiseverein) and a trained chemist who described many minerals, went to Portugal and the Azores in 1838 with Guthnick. His collections formed a basis for the edition of the *Flora Azorica* (Seubert 1844). For details of his life, see Hochstetter (1859).

Hohenacker, Rudolf Friedrich (1798 Zürich–1874 Kirchheim unter Teck, Fig. 7), a clergyman, was sent to the Caucasus by the



Figure 6. Heinrich Joseph Guthnick. Photograph by C. Durheim, Bern, Switzerland, 1870. Courtesy of Hunt Institute for Botanical Documentation.

Basler Mission. He was first acknowledged in 1831 (Hochstetter and Steudel 1831), sent material—175 species—from the Caucasus in 1833 (Hochstetter and Steudel 1834), and collected at Elisabethopol (Yelizavetpol, now Gäncä) and Helenendorf (now Xanlar), both former German settlements in Azerbaijan, where he lived until 1841. Further lots came in 1835 (Kurr 1836) and 1838 (Hochstetter and Steudel 1838b), a total of 6 by 1839 (Hochstetter and Steudel 1839). From about 1842, Hohenacker, after moving to Esslingen, edited many series of exsiccate (Lanjouw and Stafleu 1957, 2(2):281). They, however, are not connected to the Reiseverein. There is much material at STU and TUB. For a detailed



Figure 7. Rudolph Friedrich Hohenacker. Courtesy of Hunt Institute for Botanical Documentation.

biography, see Baur (1969); see also Stafleu and Cowan (1979a, 2:252).

Hübener, Johann Wilhelm Peter (1807 Hamburg–Billwärder–1847 Hamburg–Altona) was a famous bryologist. He traveled with J. G. Kurr to Norway in 1828, where they gathered some 30,000 specimens, about equal numbers of phanerogamae and cryptogamae (Hochstetter and Steudel 1828b). Fleischer (1871), however, mentions only 24,000 specimens for the same journey. See also Stafleu and Cowan (1979b, 2:357).

Kotschy, Carl (Karl) Georg Theodor (1813 Ustroń near Těšín, Silesia (today Poland)—1866 Vienna, Fig. 8), a traveler and an explorer, was later curator at Vienna. He mostly



Figure 8. Carl Georg Theodor Kotschy. Lithograph by Engelbach. Courtesy of Hunt Institute for Botanical Documentation.

traveled through the Orient (Turkey, Persia), where he collected much important material including types of later described species. Kotschy’s connection to the Reiseverein was through the sponsoring of his second journey to Egypt and the Sudan (labeled “Aethiopia,” which is the early name of the Sudan, Friis unpubl., from Nicolson, pers. comm.) in 1839. “Cordofan, Sennar, Faloskel” is found in Hochstetter and Steudel (1839). Herbarium is at W. For a concise biography, see Rechinger (1960); see also Stafleu and Cowan (1979c, 2:655), Chaudhri et al. (1972, 2(3):382).

Kurr, Johann Gottlob (later: von Kurr) (1798 Sulzbach an der Murr–1870 Stuttgart, Fig. 9), a pharmacist and later physician, was associated with the Reiseverein during its whole existence, ordering and distributing material, etc. He went to Norway in 1828 with J. W. P. Hübener, where they collected



Figure 9. Johann Gottlob Kurr. © Württembergische Landesbibliothek, Stuttgart, photo by Joachim Siener.

plants and minerals. They got north to the Dovrefjell. A report of this journey was published later (Kurr 1849–1850). In his later years he was mostly concerned with minerals and fossils. Some material, especially from Norway, is at STU, although the majority of his herbarium is probably lost. For a detailed biography, see Fleischer (1871); see also Stafleu and Cowan (1979d, 2:705).

Lhotsky, Johann (1795 Lwiw, Galicia, today Ukraine–1866 London) traveled to South America and Australia. In 1838 the Reiseverein distributed material from Sydney and Port Jackson, which he got from the “Königliche botanische Gesellschaft in Regensburg” (Hochstetter and Steudel 1838a, b). For the complications and problems with this material, see Ilg (1984, pp. 94–98); for a biography, see Kruta et al. (1977), also Stafleu and Cowan (1981a, 3:5).

Moser, Dr. Karl (? Langenau, Württemberg–1838 USA), a pharmacist, emigrated to America (Philadelphia) sometime before 1833. The Reiseverein distributed plant specimens from Moser's collection from the United States in 1833 (Hochstetter and Steudel 1835a). Some specimens are at STU. For some details, see Vegter (1976, 2(4):562).

Müller, Franz August (1798 Lausigk, Saxony–1871 Schneeberg, Saxony) traveled in 1827 to the southeastern Alps, Istria and Sardinia and during part of the journey was accompanied by F. Fleischer. Müller had some problems with the "rapacious inhabitants" of Sardinia but eventually was able to return that same year with about 20,000 specimens (Hochstetter and Steudel 1827a). He later managed a pharmacy in Schneeberg in Saxony and specialized in bryophytes and lichens (Grummann 1974). Herbarium is at DR with some material at STU. See also Stafleu and Cowan (1981b, 3:625–626) and Vegter (1976, 2(4):568).

Schimper, Georg Wilhelm (1804 ?Mannheim–1878 Adoa, Abyssinia) was the most important, the most expensive and, aside from Welwitsch, the most troublesome traveler of the Reiseverein. He traveled to Algiers from 1831 to 1832, not a very successful journey because of his illness (Hochstetter and Steudel 1832). He returned to Switzerland in 1832. Schimper himself published a report (1834). That same year he departed with A. Wiest for Egypt, a journey that, along with the Reiseverein sponsorship, received support from the King of Württemberg and the Grand Duke of Baden (Hochstetter and Steudel 1835b, 1836). A shipwreck in the Ionian Sea near the island of Cephalonia (where both men saved themselves by swimming ashore) interrupted their voyage. They finally arrived in Alexandria on 27 November 1834 (Kurr 1836). Wiest later died of the plague. From 1836 to 1840

Schimper traveled through the Sinai, where he stayed at the famous St. Catherine's monastery, then through the Arabian Peninsula and on to Hazabot, Abyssinia, where he collected and lived as a guest of the local ruler, King Ubié (Cufodontis 1951), and later became governor of the Antitecho Province. When an attempt to return home failed because of an illness, he decided to remain in Abyssinia. He married an Abyssinian princess and lived there until his death in 1878. For further details of his biography and some letters, see Götz (1980). Until about 1840 he sent material to Esslingen, where it was distributed to the members; later, after the end of the Reiseverein, further material was sold by Hohenacker. In 1836 about 30,000 specimens arrived from Egypt (Hochstetter and Steudel 1836). Hochstetter and Steudel (1838a, b) launched three urgent appeals for money to support Schimper, and Hochstetter (1841a) published a directory of the first part of Schimper's Abyssinian plant collections. For a report of his life in Abyssinia, see Schimper (1868); for his collecting localities, see Cufodontis (1951) and Gillett (1972). Some early exsiccate have valid diagnoses of new taxa on printed labels (Friis unpubl., from Nicolson, pers. comm.). Many specimens are at STU, HOH and TUB. See also Stafleu and Cowan (1985a, 5:163–165) and Vegter (1986, 2(6):840).

The place of birth of this famous man is still unknown: Schimper himself stated "Mannheim," and later authors, e.g., Cufodontis (1951, p. 84), mentioned Reichenschwand near Nürnberg. In none of these places, however, was his birth recorded in any way, although the parish registers had been thoroughly kept at that time (Götz 1985, p. 6).

Welwitsch, Friedrich Martin Joseph (1806 Maria Saal, Carinthia–1872 London, Fig. 10) was sent by the Reiseverein on a journey to the Canary Islands, the Azores and the Cape



Figure 10. Friedrich Martin Joseph Welwitsch. Courtesy of Hunt Institute for Botanical Documentation.

Verde Islands, but he only got as far as Lisbon and so sent material only from Portugal. He was appointed head of the botanical garden of Ajuda (Lisboa), and his collections for the Reiseverein were delayed and incomplete. This was the last regularly distributed material of the Reiseverein (Hochstetter and Steudel 1842). For a biography, see Dolezal (1959). Specimens are at STU. See also Stafleu and Cowan (1988, 7:174–178) and Vegter (1988, 7:1136).

Wiest, Anton (1801 Weingarten–1835 Cairo) traveled with Schimper to Egypt, where he died from the plague (Hochstetter and Steudel 1835a). Wiest left about 18,000 specimens to the Reiseverein, mostly from the island of Cephalonia and from Egypt (Kurr 1836). Many are extant at HOH.

The final years

The Reiseverein seems to have been disbanded after 1842. The number of members had dropped to under 50 by 1840, as Hochstetter complained in a letter to A. Braun (cited in Baur 1970). The loss of shareholders, the huge amount of work, and problems with travelers may have been the reasons for its gradual decline. Schimper’s material was delayed for several years and was less abundant than expected, and some of it was destroyed or lost during transit. Welwitsch sent material from regions other than expected and eventually went his own way. The inability of the Reiseverein to support him with additional money was an important factor in its final dissolution. As the members became frustrated, their interest waned. This may, in turn, have led to the resignation of the two founders and later “directors.” In a letter to his friend Reichenbach in 1840, Hochstetter bitterly complained about the behavior of Welwitsch (see also Dolezal 1959, p. 274). The Reiseverein was again mentioned in 1845 in a letter to the same recipient (both cited in Habacher 1970) in reference to the finances for a second journey of Kotschy, but this support probably never materialized. The system of prepayment ultimately proved to be a failure when not enough material or material other than anticipated was distributed.

At this same time, R. F. Hohenacker began his activities of commercially distributing plants after he moved from the Caucasus to Basel and then to Esslingen. Instead of a prepayment system, he simply traded specimens he had collected himself or acquired from other botanists. He even sold the remnants of the *Unio Itineraria* material left to him by Hochstetter and Steudel (Baur 1969).

Interestingly, Steudel made an attempt to revive the Reiseverein in 1853, when he proposed, to the Kaiserlich-Leopoldinisch-

Carolinische Deutsche Akademie der Naturforscher, the founding of a society of shareholders with a bank exclusively for supporting science and for sending travelers throughout the world to collect material. He even presented his ideas for the statutes and a design for the shares (Steudel 1853).

The impact of the Reiseverein on botanical research

The collections of the Reiseverein became a tremendous stimulus for botanical research in Europe from about 1830. Many new species were described by Hochstetter and Steudel themselves in the years following, in Steudel's second edition of his *Nomenclator Botanicus* (Steudel 1840–1841) and in his *Synopsis Plantarum Glumacearum* (Steudel 1855), for example. Both authors became famous through the Reiseverein. Hooker (1827) praised the collection he obtained from the Reiseverein: "I am actually in possession of a collection, which, for the number, rarity, and beauty of the specimens, has much exceeded my most sanguine expectations, and such as, but for this valuable institution, *no money could have purchased*. . . ."

Many new plant species from Africa were described based on the material from the Reiseverein, mainly by Richard (1847–1850), Oliver (1868–1937) and Hochstetter himself (1841b; 1842; 1843; 1844a, b; 1846). Braun (1841) reported the successful growing of plants sent by Schimper from Abyssinia in the Botanical Garden of Karlsruhe, and some new names have been published based on this material. Kotschy, while on his "*Iter nubicum*," collected many specimens from Sudan, which later became the types of several names described by Hochstetter (23 new taxa of Gramineae in Hochstetter 1844b), Steudel, Schultz-Bipontinus, Fenzl, Boissier, and Choisy, for example. One of the first floras

of the Azores (Seubert 1844) is based on the collections of C. Hochstetter, a son of one of the founders. Many new names in A. P. de Candolle's *Prodromus Systematis Naturalis Regni Vegetabilis* are based on collections from the Reiseverein, published either by de Candolle himself or by his co-workers, such as Bentham, Nees von Esenbeck, Moqin, Salt, Choisy, Dunal, and Schauer.

Probably the most important role of the enterprise was the securing of collections and the stimulation of collecting activities. The acquisition of Bertero's herbarium after his tragic death at sea made it available for scientific research, and the regular purchase of material from Ecklon, Lhotsky, and Hohenacker enabled them to intensively concentrate on collecting new specimens.

No less than five plants are named after the Unio Itinerae: *Cacalia unionis* Kuntze, *Eragrostis unionis* Steudel, *Gnaphalium unionis* Schultz-Bipontinus ex Hochstetter, *Senecio unionis* Schultz-Bipontinus ex A. Richard, and *Vernonia unionis* Schultz-Bipontinus ex Walpers.

Finally, the Reiseverein was responsible for one considerable economic impact. Schimper introduced the cultivation of the potato to Abyssinia, something that was eventually to improve the life of many people there (Götz 1980). Were it not for the Reiseverein, this introduction would have happened much later.

Statistics

To estimate the number of specimens collected by the Reiseverein is not an easy task at the moment. Lists of the distributed material have vanished over the years and may yet be found. Table 2 shows some figures from the announcements and reports of Hochstetter and Steudel in the journal *Flora*. They are probably incomplete, but they do give an idea

Table 2. The collectors of the Reiseverein and their collections. Data from Hochstetter's and Steudel's announcements in the journal *Flora* and from Gay (1832).

Name	Destination	Year	Number of species	Number of specimens
Bertero	Chile	1835	1,800	14,000
Ecklon	South Africa	1827	>1,000	7,000
Ecklon	South Africa	1829	800	
Ecklon	South Africa	1830	3,000	
Fleischer	Alps	1826	45 mosses (Hochstetter 1826b)	
Endress	Pyrenees	1829–1831	600	
Fleischer	Egypt, Smyrna	1827		25,000
Frank	USA. Ohio	1835	200	
Gutnick & Hochstetter jun.	Portugal, Azores	1838	200–300	
Hohenacker	Georgia	1834	175	
Hohenacker	Georgia	1835	ca.200	
Hohenacker	Georgia	1838	200	
Kotschy	Sudan	1842	>350	
Kurr & Hübner	Norway	1828	250–280	24,000–30,000
Lhotsky	New Holland	1838	ca.200	
Moser	USA	1835	ca.200	
Müller	Sardinia	1827		20,000
Schimper	Algeria	1832	350	
Schimper	Arabia	1836	ca.500	ca.30,000
Schimper	Abyssinia	1839	1,500–2,000 (400 in 1st part)	
Schimper	Egypt	1836		6,000
Welwitsch	Portugal	1842	ca.400	
Wiest	Egypt	1836		18,000

of the great number of species collected and the amount of specimens distributed. A rough estimate may come to about 11,000 species. Even more difficult to estimate is the number of new names based on types collected by the Reiseverein and the total number of specimens distributed. If each of the 116 shareholders in 1828 received the promised minimal number of 200 specimens (Hochstetter and

Steudel 1828a), the total number of specimens distributed would have been at least 23,200 per year. In fact, the number was between 200 and 300 a year (between 250 to 280 distributed in 1828, Hochstetter and Steudel 1828b). During the 18 years of its existence, the number of members fluctuated greatly; however, a rough estimate of at least 400,000 specimens can be justified. An estimate of the collections

is impossible at the moment because data of Hochstetter and Steudel exclusively refer to the numbers of species or specimens.

For a survey of the species and types, and the number of specimens, a complete recording of the collections of the Reiseverein would be necessary. This could be implemented with the nearly complete set of duplicates extant at TUB, and with this material a helpful database including collecting localities and itineraries could be produced for curators and taxonomists.

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