

## Christian Steven (1781–1863) at the Lower Volga

Vadim A. Sagalayev & Gennady A. Firsov

*Sagalayev, V. A., Russia, 400062, Volgograd, Universitetsky Prospect, 100. Volgograd State University. E-mail: alex\_sag@mail.ru*

*Firsov, G. A., 199155 Saint-Petersburg, Korablestroitelei Street, House 42 Corpus 1 Flat 403.*

*Office: 197376 Saint-Petersburg, Professor Popov Street, 2, Peter the Great Botanic Garden of the Botanical Institute RAS. E-mail: gennady\_firsov@mail.ru*

Christian Steven made several excursions to the Caucasus, Crimea and the southern provinces of Russia. He visited occasionally also Lower Volga area and did botanical collections, jointly with Marschall von Bieberstein in 1800. In this article, we present Stevens activity here. He collected plant specimens in Lower Volga area in 1800, 1806, 1811 and 1816. Based on specimens collected here, and in some cases additionally also elsewhere, Steven described *Adonis volgensis* (1817), *Ceratocephala incurva* (1848), *C. leiocarpa* (1848), *C. reflexa* (1848) and *Centaurea gerberi* (Steven 1856). Further, *Allium sabulosum* (Steven ex Bunge 1838) and *Delphinium cuneatum* (Steven ex DC. 1818) were described based on material Steven collected in this region.

### Introduction

Finnish-born Russian botanist and Entomologist Christian von Steven (in Russian: Христиан Христианович Стивен) was born in Fredrikshamn, Russia (today Finland) in 30 January 1781, and he died in Simferopol, Crimea, Russia, in 30 April 1863.

Steven (Fig. 1) graduated from Medical-Chirurgical Academy (now Military-Medical Academy) at St. Petersburg and defended his thesis *Spicilegium cryptogamicum florum Petropolitanae* in 1800. However, it was never published. Prior to that Steven had studied at the Academy of Turku, Sweden (Finland today) and later at Jena, Germany. In St. Petersburg soon he got to know the Botanist Friedrich August Marschall von Bieberstein (1768–1827), the famous author of *Flora taurico-caucasica* (von Bieberstein 1808–1819).

Marschall von Bieberstein (hereafter von Bieberstein) acted as senior inspector of Russian

silkworm plantations. He had studied in 1796–1799 intensively the flora and fauna in area by the border between Asia and Europe, so called "The Caucasian Line" (a series of Russian military fortresses in the Caucasus from the Black Sea to the Caspian Sea along rivers Kuban, Malka and Terek). He collected during summers and worked with his material at St. Petersburg in winters. Most likely von Bieberstein and Christian Steven met there while Steven was finishing his University studies. von Bieberstein became to play very important role in Steven's life (Stankov 1940), by helping his first steps in the field of botany.

Von Bieberstein employed Steven as his assistant in 1800, to act as inspector of sericulture (silkworm breeding) in Russian Caucasus. Since 1803 Steven was the inspector also in Transcaucasia, and in 1806–1826 the deputy senior inspector of all Russian sericultures. In 1812 Steven were given new responsibilities, e.g. the establishment of Russian Imperial Nikita Botan-

ic Garden and he was the first director of it between 1812–1827. After the death of von Bieberstein in 1826 Steven was appointed senior inspector of sericulture in southern Russia. By that occasion Nicolai Anders von Hartwiss (1793–1860) became director of Botanical Garden at Nikita, and Steven remained supervisor. Steven retired in 1850 (von Nordmann 1865, Hiitonen 1964).

Steven studied especially the flora of Crimea, but it is less well known, that he also visited occasionally Lower Volga area, and made collections there (Wulf 1913, Stankov 1940, Kukkonen & Viljamaa 1971). Itineraries of these trips were never published. By examining herbarium labels and published papers it is possible to broadly outline these excursions. The likely route would follow the from Kyzlyar to Astrakhan, and then to Sarepta and Zaritsin (old name of the Volgograd), and after that along Saratov's highway to Saratov and Tambov, or Astrakhan's highway along Don and Choper Rivers to Moscow (Kukkonen & Viljamaa 1971).



Fig. 1. Portrait of Christian Steven.

## Excursions

In the spring 1800 von Bieberstein and Steven departed from St. Petersburg first to Moscow, the final destination being Kizlyar, Dagestan – the forthcoming place of his new service (Wulf 1917). In Moscow they lived for several weeks at Christian Friedrich Stephan (1757–1814), famous botanist and director of botanic garden of the Medical-Chirurgical Academy (Wulf 1913).

Based on herbarium labels, von Bieberstein and Steven collected plants that year together in Caucasus and Lower Volga region, especially in the towns of Astrakhan and German Sarepta settlement. This region, especially city of Sarepta (district of the Volgograd city today), was very familiar to von Bieberstein. He described many species collected here, e.g. *Dianthus squarrosus* M. Bieb., *D. rigidus* M. Bieb., *Euphorbia undulata* M. Bieb., *Medicago cancellata* M. Bieb., *Scorzonera ensifolia* M. Bieb., *S. mollis* M. Bieb., *Astragalus reticulatus* M. Bieb. (Bieberstein 1808, 1819). He travelled also in Astrakhan, and between Volga and Don Rivers, which are type localities for *Arenaria longifolia* M. Bieb., *Astragalus pallescens* M. Bieb., *Pyrethrum achilleifo-*

*lium* M. Bieb. and *Orobus lacteus* M. Bieb. Naturally von Bieberstein introduced Sarepta and surroundings to Steven.

In 1806 Steven visited different districts of the Lower Volga again, including Sarepta, Saratov, Norka settlement, and areas between Volga and Medweditsa Rivers. In 1807 Steven moved to Simferopol, Crimea. After that he visited 1811 Sarepta and Kamishin and 1816 Astrakhan (Kukkonen & Viljamaa 1971).

## New taxa from Lower Volga

*Allium sabulosum* Stev. ex Bunge 1838 – Luk peschany.

Alexander Georg von Bunge (1803–1890) described two new species of onions collected in Lower Volga area, *Allium sabulosum* Steven ex Bunge and *A. nderiense* Fisch. ex Bunge in Claus (1838). *A. sabulosum* was described based on material in Steven's herbarium and mentioned in a manuscript of Steven. *A. sabulosum* Stev. MS. (Bunge in Claus 1838). It was collected in



Fig. 2. *Adonis volgensis* at Volgograd area. Vadim A. Sagalayev 8.4.2006.

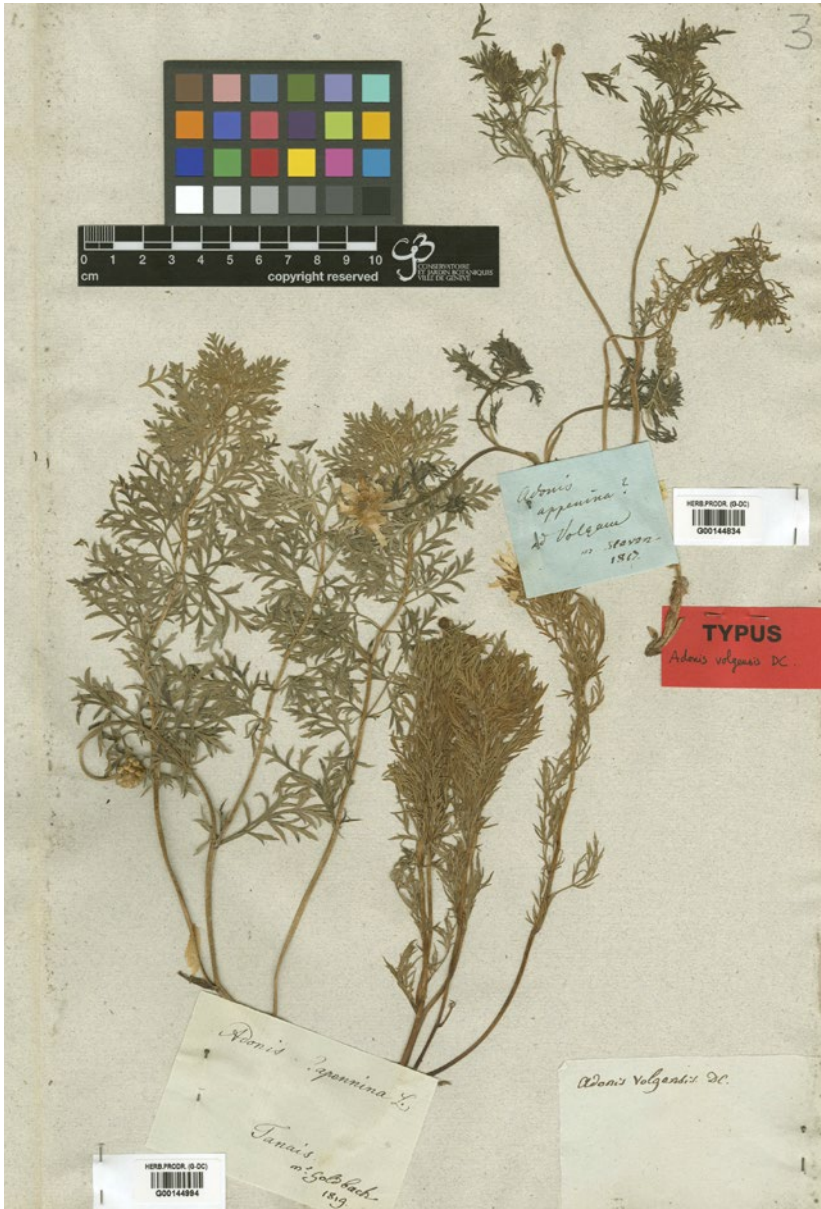
”In colles arenosos littoris borealis maris Caspii”. That locality is east of Astrakhan region and river Volga, Ryn Desert. Councillor of state and Professor of Chemistry at University of Dorpat, Karl Christian Traugott Friedemann Göbel (1794–1851), and Karl Ernst Claus (1796–1864) traveled in 1834 across the Lower Volga and Northern coast of the Caspian Sea. The herbarium material was processed by Bunge. His herbarium and types are deposited at St. Petersburg (LE!). *Allium sabulosum* is the type species of sect. *Eremoprasum* (Kamelin) F. O. Khass., R. M. Fritsch & N. Friesen (Bogdanovic et al. 2011).

Also Bieberstein collected in the area and described several new taxa to science, e.g. *Carex physodes* M. Bieb., *Carduus uncinatus* M. Bieb., *Chondrilla graminea* M. Bieb., *Crambe aspera* M. Bieb., *Ferula caspica* M. Bieb., *Arenaria glutinosa* [*Holosteum glutinosum* (M. Bieb.) Fisch. et C. A. Mey.], *Raphanus laevigatus* [*Goldbachia laevigata* (M. Bieb.) DC.], *Myosotis marginata* [*Lappula marginata* (M. Bieb.) Guerke], *Anchusa picta* [*Nonea picta* (M. Bieb.) Fisch. et C.

A. Mey.], *Polygonum acetosum* M. Bieb. (Bieberstein, 1808a, 1808b, 1819). Some taxa were described based on the collections by Steven, judged based on notes in labels of the Bieberstein’s herbarium (Karavayev et al. 1977).

***Adonis volgensis* DC. 1818** – Gorizvet volzhsky Type locality is ”Imperio Rutheno ad flumen Volgam”. This species (Figs. 2, 3) was described by De Candolle (1818) based on material collected by Steven in along Volga river in Ruthenia (Russia). Holotype in Geneva (G-DC, G00144834) was donated to De Candolle by Steven in 1817, not 1807 as indicated by Sennikov (1998). Steven travel along the post road through Tsaritsyn (Volgograd) – Dubovka – Kamyshin – Saratov. *A. volgensis* is very common especially in this area. In his letter to De Candolle provisionally suggested name *A.[donis] apennina*.

*Adonis volgensis* has been treated also as *Adonanthe volgensis* (Stev.) Chrtek & Slaviková and *Chrysocyathus volgensis* (Steven) Holub.



◀ Fig. 3. Type specimen of *Adonis vernalis*. © Conservatoire et Jardin botaniques de la Ville de Genève.

***Ceratocephala leiocarpa* Steven 1848 –**

Rogoglavnik holoplodny (Fig 4)

Described based on material collected at Astrakhan area (Steven 1848).

***Ceratocephala reflexa* Steven 1848 –**

Rogoglavnik otklonenno-plodnikovoy

Described based on material (Fig. 5) collected at Astrakhan area (Steven 1848).

***Ceratocephala incurva* Steven 1848 –**

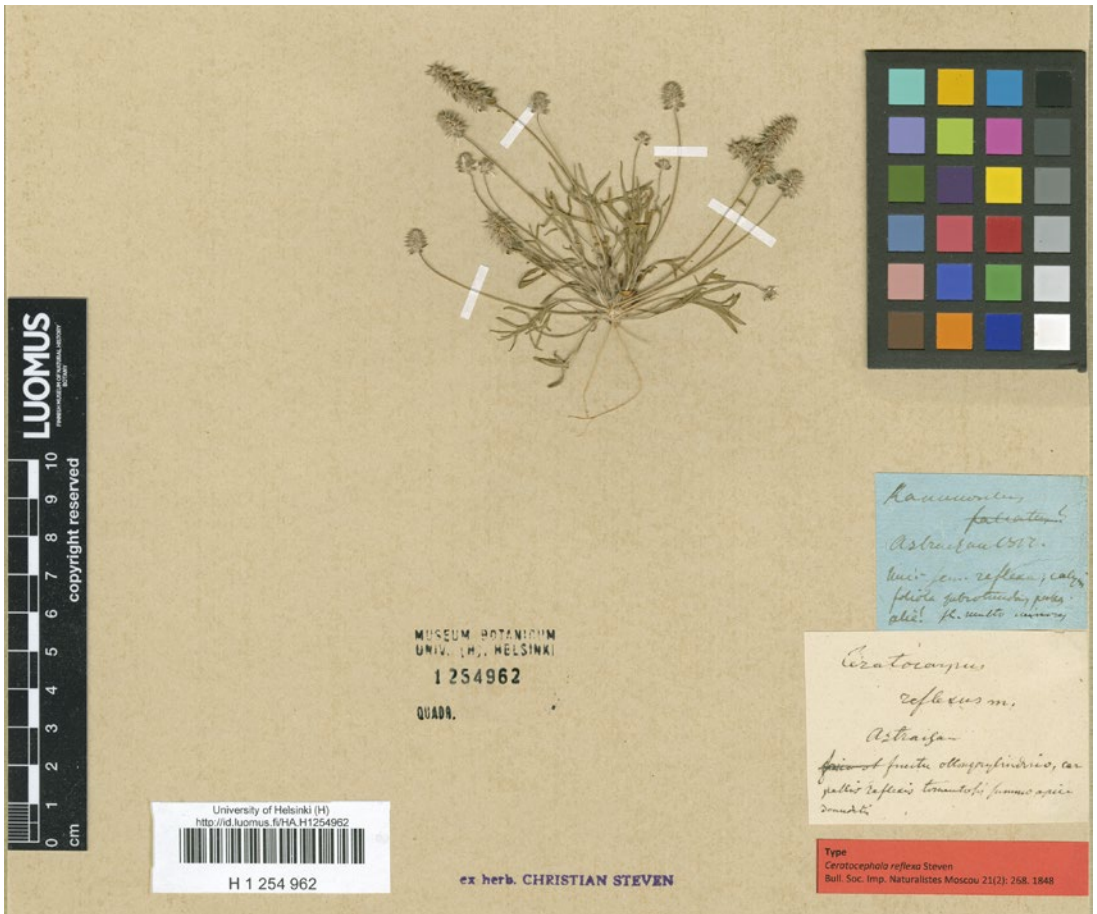
Rogoglavnik izognutorogy

Steven (1848) described this species based on material collected in Tauria campestris [Crimea], Iberia [Georgia] and Armenia rossica. He cited also Ledebour's (1842) Flora Rossica, in which a syntype is given, through "Blum pl. exicc." Blume's specimens, which were collected at Astrakhan area. It is also treated as a subspecies of *C. falcata*, viz. *C. falcata* subsp. *incurva* (Steven) Chrtěk & Chrtěková.



◀ Fig. 4. *Ceratocephala leiocarpa* at Astrakhan, Beros's Hill. Vadim A. Sagalayev 28.4.2008.

▼ Fig. 5. Type specimen of *Ceratocephala reflexa*. © Finnish Museum of Natural History, Botanical Museum.



***Delphinium cuneatum*** Steven ex DC. 1817 –  
Zhivokost klinovidnaya

This species (Fig. 6) was described by De Candolle (1818) based on material collected near Saratov and at Lower Volga ("Circa Saratof et ad Volgam inferiorem"). De Candolle wrote *D. cuneatum* Stev. diss. ined. (dissertation ineditus). However, such a dissertation was never written and most likely Steven did not had such an intention. The syntype provided by Steven was collected in garden, v. v. c., vidi vivam cultae. Holotype in Geneva (G-DC, G00200197) was donated to De Candolle by Steven in 1817.

*D. rossicum* Litv., *D. litwinowii* Sambuk and *D. duhmbergii* Huth are synonyms of *D. cuneatum*.

***Centaurea gerberi*** Steven 1856 – Vasilyok  
Gerbera

In the protologue Steven (1856) indicates indirectly, by citing Claus (1851), that one syntype was collected near Uschi at Kamyshin (between the city of Volgograd and Saratov). This obligate psammophilous species is still growing here on sandy hills (Fig. 7).



► Fig. 6. Type specimen of *Delphinium cuneatum*. © Conservatoire et Jardin botaniques de la Ville de Genève.

Steven was the outstanding botanist and entomologist, outstanding in organising field work and in describing new plant species. In the early 19<sup>th</sup> century, he was the best expert on Crimean and Caucasian flora (Lipschitz 1938). Being the Inspector of Silkworm Breeding at Caucasus, the founder and the first Director of Nikita Botanic Garden, Steven was consequently the key person responsible for the whole agriculture in southern

Russia. He developed the ebullient activity in the fields of agronomy and botany. Steven was well known abroad. He exchanged letters with leading European botanist already since 1815 (Kukkonen & Viljamaa 1971). In 1821, he met De Candolle in Geneva. He was one of the most active Members of the oldest scientific society – The Moscow Society of Nature Explorers.

▼► Fig. 7. *Centaurea gerberi* at Volgograd area, Kamyshin. Vadim A. Sagalayev 18.7.2011.



In 1849 Steven celebrated his 50-years of service. On eye-witness accounts, he was of small height but of lively and passionate temperament. In that Jubileum, he was elected the Honourable Member of all Russian Universities and Academies of Sciences. All scientists visiting Crimea were warmly hosted by Steven (Gukov 2001).

The main part of his herbarium which included more than 23 000 species, Steven donated to the University of Helsinki in 1860 (three years before his death). It is kept at Finnish Museum of Natural History, Botanical Museum (H). It is the most valuable collection on the flora of Crimea, Caucasus and southern part of Russia and Ukraine (Stankov 1940). A part of Steven's herbarium is kept in LE, MW, KW and in several other herbaria of Russia and Ukraine (Ena 2012).

Steven's letters written in 1828–1863 to professor Alexander von Nordmann (1803–1866) are maintained in the archives of Finnish national library. Some letters are also at the central archive of Simferopol and at Geneva library in Switzerland.

In June 2013 the Botanical Tour of the Finnish Biology Society Vanamo, jointly with Volgograd State University, was organized to the Lower Volga – to the area where Christian Steven made his botanical collections two centuries ago.

*Acknowledgements.* Dr. Laurent Gautier Head Curator of phanerogams, and Herbarium secretary Laurence Loze, both at Conservatoire et Jardin botaniques de la Ville de Genève. Ari Taponen for technical assistance.

## References

- Bieberstein, F. A. 1808–1819: Flora Taurico-Caucasica, exhibens stirpes phanerogamas in Chersoneso taurica et regionibus Caucasicis sponte crescentes 1–3. — 1(1808): VI+429 p.; 2(1808): 478 p.; 3(1819): IV+655 p. Typis Academicis, Charkoviae.
- Bogdanovic, S., Brullo, C., Brullo, S., Del Galdo, G. G., Musarella, C. M. & Salmeri, C. 2011: *Allium cithaeronis* Bogdanovic, C. Brullo, Brullo, Giusso, Musarella & Salmeri (Alliaceae), a new species from Greece. — *Candollea* 66: 377–382.
- Claus, C. 1838: Ueber die Flora und Fauna der kaspischen Steppe. Index plantarum in deserto Caspio atque in regionibus prope adjacentibus observatarum. — *Reise in die Steppen des südlichen Russlands* 2: 216–322.
- Claus, C. 1851: Localflora der Wolgagegenden. — *Beiträge zur Pflanzenkunde des Russischen Reiches* 8: 1–324.
- De Candolle A. P. 1818: *Regni vegetabilis systema naturale*. — 564 p. Treuttel et Würtz, Parisiis.
- Ena, A. V. 2012: *Prirodnaya flora Krymskogo poluostrova: monographia*. — 232 p. N. Oriadna, Stavropol.
- Gukov, G. V. 2001: *Chje imja ti nosish, rastenije? (Sto pjatdesjat kratkih biografij: (Iz istorii botanicheskikh issledovanij na Dalnem Vostoke)*. — 400 p. Dalnauka, Vladivostok.
- Hiitonen, I. 1964: Christian Steven. — *Memoranda Societatis pro Fauna et Flora Fennica* 40: 178–187.
- Karavayev, M. N., Gubanov, I. A. & Shvedchikova, N. K. 1977: *Autentichnie obratzsi novih vidov F. Bibersteina, hranjaschiesja v gerbarii Moskovskogo universiteta (MW)* — *Novitates Systematicae Plantarum Vasculorum* 14: 256–267.
- Kukkonen, I. & Viljamaa, K. 1971: Herbarium of Christian Steven. — Pamphlet Issued by the Botanical Museum 4: 1–109.
- Ledebour, C. F. 1842: *Flora Rossica*. — XVI + 790 p. Sumptibus Librariae E. Schweizerbart, Stuttgartiae.
- Lipschitz, S. Yu. 1938: *Perepiska Decandolej s Ch. Stevenom*. — *Bot. Journ. SSSR*. 23(3): 252–267.
- von Nordmann, A. 1865: Christian Steven, der Nestor der botaniker. — *Bulletin de la Société impériale des Naturalistes de Moscou* 38(1): 101–161.
- Sagalayev, V. A. K 1995: *Biografii H. K. Wunderlich (1778–1855) – Kolonija Sarepta i nemtsi Povolzhja v istorii Rossii*. — *Sbornik tezisov po materialam nauchnoi konferentsii, posviaschennoi 230-letiju osnovanija kolonii Sarepta*. 2-4 sentjabrja 1995 g. Volgograd: 42–43.
- Sennikov, A. 1998: *Notulae taxonomicae et nomenclatoricae de taxis nonnullis e generibus Adonis L. (Ranunculaceae), Linum (Linaceae), Adenophora Fisch. (Campanulaceae) et Hypericum L. (Hypericaceae)*. — *Novitates Systematicae Plantarum Vasculorum* 31: 81–91.
- Stankov, S. S. 1940: Christian Christianovich Steven (1781–1863). — 52 p. Izdatelstvo Moskovskogo obshchestva ispytatelei prirody, Moscow.
- Steven, C. 1848: *Annotationes botanicae [Ceratoccephali genus]*. — *Bulletin de la Société impériale des Naturalistes de Moscou* 21(3): 267–284.
- Steven, C. 1856: *Verzeichniss der auf der taurischen Halbinsel wildwachsenden Pflanzen*. — *Bulletin de la Société Imperiale des Naturalistes de Moscou* 29(4): 339–418.
- Wulf, E. V. 1913: *Christian Steven kak botanik (k 50-letiju so dnja ego smerti)*. — *Zapiski Krymskogo obshchestva estestvoispytatelei i ljubitelei prirody* 3: 53–60.
- Wulf, E. V. 1917: *Materiali dlja biografii Chr. Stevena*. 1. *Pisma Chr. Stevena k Marshallu Bibersteinu*. 1800 g. – 1826 g. — *Vestnik Russkoj flory* 3(1): 55–77.