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iMAGAZINE

## ILLUSTRATIONS FROM ACADEMIC EXPEDITIONS IN RUSSIA

The works of Falck and Georgi

YOUR STORY By Vera Shirokova and Alexey Sobisevich, Moscow, Russia | December, 2015



The research group – Olga Alexandrovskaya, Olga Romanova, Vera Shirokova and Nadezhda Ozerova – at The IK Foundation seminar **THE BRIDGE BUILDER EXPEDITIONS - RUSSIA & KAZAKHSTAN** at The Russian Geographical Society in Moscow. The fifth member of the group is Alexey Sobisevich, who has taken this photograph of his colleagues at the entrance of the head quarters at the Geographical Society.

**Johan Peter Falck** is known in Russia as a famous scientist and traveller. He studied at Uppsala University for Carl Linnaeus and defended a botanical dissertation in 1762, a year later in September 1763, he became Curator for Kruse's Cabinet of Natural History in St. Petersburg. In 1765 Falck was appointed as Professor in medicine and botany in the Russian Imperial Academy of Sciences and entered a curator post in the botanical garden.

k and his assistant Christoph Bardanes made detailed travel notes about the hydrography hydrochemistry of rivers and lakes in the Russian Empire, most importantly at Zungoria vadays in the northern part of Kazakhstan) and Central Asia. In the last area he tried to

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find traces of rivers connecting the Aral Sea with the Caspian Sea. Falck also made notes on the water wells and springs on the way from Semipalatinsk to Karlos and Kylchy. He described salt waters, salt mineral springs on the Shelon and Lovat rivers between the cities of Novgorod and Tver, saline lands in the Kuman steppe; salt waters in the Kiriz steppe, where he researched concentrated salt by a hydrometer. According to his observations Falck divided lakes at Isetskaja steppe into several types as fresh, liquorice, bitter and drying lakes.

The substantial collection comprises factual material concerning the natural waters of Russia, in the additional part of his work *Beyträge zur topographischen Kenntniss des Russischen Reichs* Falck presented his own classification of waters: water from atmosphere; simple water from springs, rivers and lakes; waters, which leaves a sediment; salt waters; waters with oil film; sulphuric waters; vitriolic waters and warm waters. That classification was not detailed, but the materials helped Johann Gottlieb Georgi in the creation of his own classification of surface and ground waters.

Who was first, Falck or Georgi in creating this particular classification? It is a difficult question and it is furthermore necessary to consider some other aspects. Falck was a sickly and nervous person and his duties as head of the expedition were too stressful for him, so the Russian Academy of Sciences sent the young scientist Georgi to assist Falck. However, Georgi could not improve the situation and Falck who is believed to have been in a long-term and deep depression (he had suffered a long time from hypochondriasis), committed suicide some years later in Kazan city on 31st March in 1774.

One of the other participants of the expedition, the Finnish-Swedish explorer and naturalist Eric Laxman had some additional aversion to Georgi, so he blamed him for Falck's tragic death. The reason for that accusation was in fact that Laxman knew about Falck's suspicion towards Georgi, as it was Laxman's belief that Georgi took credit for all the data without permission and references to other participants.

Falck and Georgi initially met in July 1770 on the way to Uralsk city in Kalmykia. They came to Orenburg city and stayed there till the end of the year. In the beginning of 1771 they came to Iset river for geographical research, using different geographical directions. Falck moved to Iset through the Orenburgical fortified line, which was built to protect the city from local nomads, and Georgi moved to Iset through Bashkiria and Ural.

When Georgi came to Chelyabinsk he found that Falck was suffering from illness, so he travelled on with his own expedition collecting materials about local people and nature. As soon as Falck recovered, the scientists travelled to Omsk city together. From Omsk they continued through the Barabinsk steppe to North Altaj, examined mines at Barnaul and Altaj, made research of Altaj ridge and then arrived to Tomsk city. It seems that the relationship between Georgi and Falck went from bad to worse, and then finally Falck got the opportunity to rid himself of a rival.

## PICTURE PORTFOLIO



In Tomsk Georgi obtained the order to join the expedition of Peter Simon Pallas, a German scientist invited to the St Petersburg Academy of Sciences who had led an expedition to the central Russian provinces. In February 1772, Georgi together with a group of students came to Krasnoyarsk city, where Pallas had his winter accommodation. In March the expedition reached Irkutsk city, here Georgi made a cartographic survey of the Baikal lake, researched the Selenga river and finally reached Yenisej river. In 1773 Georgi examined factories in Tara and Tobolsk cities, researched the basin of Chusova river and the next year made studies at the

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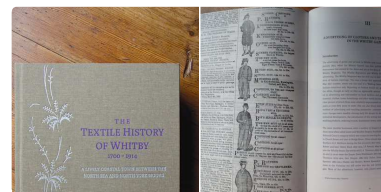


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**INVITATION**

Volga region.

On the return journey to Saint-Petersburg, Georgi found out about Falck's death and took care of his manuscripts in Kazan' city. That statement needs additional research, because according to some sources – Eric Laxman initially obtained Falck's manuscripts and then handed them to Georgi, who later prepared the material for publication. Falck's book *Beiträge zur topographischen Kenntniss des Russischen Reichs* was published in German in 1785-1787, the Russian edition first in 1824-1825. The German edition was almost unknown in Russia and only a few people had knowledge about Falck's important contribution to natural science in common and water classification in particular. In 1798 Georgi published his own manuscript *Geographische, physikalische und naturhistorische Beschreibung des Russischen Reichs*, where he summarised the results of his water classification. That idea of water classification based on its quality was borrowed by Georgi from Falck's work without any mention. So it may still be discussed and questioned, how strongly Falck's scientific observations influenced Georgi in his continuous work. However, both classifications were out of public interest for a long time, only the classification of Vladimir Vernadsky in 1933 became widely known.

As a conclusion it should be noted that Falck's six year-long expedition collected a huge amount of material. The botanic collections from the steppes near Volga river and Ural mountains, Western Siberia, South Ural and the territories near Kazan city were very substantial. The same could be said about the ethnographic materials connected to the daily life of Russian, Tatar, Bashkir, Kalmyk and Kazakh populations. Falck's notes contain information about numerous details of places he visited, additionally he paid great attention to describing the economical use of rivers and mineral sources. Particularly, he has had a great impact not only for Russian geography and botany, but also for World science.



The published book of 2011 about the extensive Russian Academical Expedition "М. В. Ломоносов и академические экспедиции XVIII века".

#### ABOUT:

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Vera Shirokova is a geographer and specialist in the history of science with particular emphasis on the hydrology and hydrochemistry. After graduation from the Geographical Department of Moscow State University she worked as an engineer at the laboratory of water reservoir research. Nowadays she works as the head of department at the History of Earth Sciences at the Institute for the History of Science and Technology at the Russian Academy of Sciences. She also has a Professor position at State University of Land Use Planning.

The Department of History in Earth Sciences supports research projects in history, geography and geology, one such project is focused on illustrations in publications originating from academic expeditions made by professional artists in the 18th and up to first half of the 19th centuries. In that time the borders of Russia expanded significantly and there was a need for detailed and comprehensive studies of the new territories. For this reason the Russian Academy of Sciences organised a program of geographical studies for new territories. The program of detailed geographical and ethnographic descriptions of these regions was planned by the famous scientist Mikhail Lomonosov.

The group of authors: Vera Shirokova, Olga Alexandrovskaya, Olga Romanova and Nadezhda Ozerova have researched that expedition, focusing on a published album with some of their results. Illustrations of plants, animals, reliefs and ethnographical information were found by these researchers in Russian libraries and archives. The published atlas *Mikhail Lomonosov and academic expeditions from 18 to first half of 19 centuries* contains

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illustrations and descriptions from expeditions of Johan Peter Falck and Johann Gottlieb Georgi among others. The young scientist Nadezhda Ozerova has made additional descriptions of plants and animals, which were originally used as illustrations in this atlas.

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