Little-known resource expeditions of A.F. Gebel and G.F. Gebel on the Kola Peninsula in the late 19th – early 20th centuries

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Abstract. The article presents the results of a study to identify new possible historical sources and determine their informational potential for historical reconstruction of the process of preparing and conducting little-known expeditionary researches of mineralogist A.F. Gebel and naturalist, ornithologist H.F. Gebel on the Kola Peninsula in the late 19th – early 20th centuries. Within the framework of humanitarian and system approaches, the research methodology was based on general scientific methods of scientific knowledge, archival, source study, problem-chronological, comparative, historical-genetic (retrospective) methods. The studies of the North-West of the Russian Empire represented a separate area of expeditionary academic research. At that time, private expeditions were organized, related to the development of industry in Russia, which made necessary the study of internal natural resources, mainly in the European part of Russia and the comprehensive studies of the extreme northern and arctic regions. The revealed archival materials of the fund of the Office of the Conference of the Academy of Sciences and the personal fund of the Director of the Mineralogical Museum of the Academy of Sciences A.F. Gebel represent a multidimensional complex thematic body of sources, consisting of creative, personal, organizational, administrative, protocolar, reporting documentation and business correspondence. Sources for studying the biography and expeditionary activity of H.F. Gebel were obituaries and lifetime published reporting expedition materials. The paper presents the results of a study to identify new possible historical sources and determine their informational potential for historical reconstruction of the process of preparing and conducting little-known expeditionary researches of mineralogist A.F. Gebel and naturalist, ornithologist H.F. Gebel on the Kola Peninsula in the late 19th – early 20th centuries. Within the framework of humanitarian and system approaches, the research methodology was based on general scientific methods of scientific knowledge, archival, source study, problem-chronological, comparative, historical-genetic (retrospective) methods.

1. Introduction

The Arctic being unique in its climatic, geopolitical conditions, natural resources, and as a multiethnic and multicultural region, has been in the focus of undying interest of political figures and scientists for several centuries. Many countries of the world maintained scientific and commercial development of this region in the end of 19th – first half of 20th centuries with the constant interest. The world community entered the third millennium already recognizing the special position of the Russian Arctic.
and Subarctic (and the Kola North as their parts) in the geopolitical space, its strategic role in solving global problems of mankind, shaping the sustainability of social and natural systems of the Earth, undoubted influence on history and development of international scientific research [1].

While the expeditions of the 18th century served the purposes of empirical replenishment of fundamental knowledge, since the 1870s the role of academic expeditions becomes essential as one of the means of industrial development of the Russian state territories and as the first form of institutionalization of science in the Kola North. Since the time of Catherine the Great, close attention has been paid to the study of the resource base. Therefore, along with so-called astronomical and physical expeditions, geological and mineralogical field studies have become increasingly important [2]. The problem of the present study is the insufficiency of the source base for research of the first little-known expeditions to the Kola North in the context of the history of the study and development of the Arctic in the late 19th – early 20th centuries. The purpose of this study is to identify new possible historical sources and their information potential for the historical reconstruction of the process of preparing and conducting little-known expeditionary researches of mineralogist A.F. Gebel and naturalist, ornithologist H.F. Gebel on the Kola Peninsula in the late 19th – early 20th centuries.

2. Sources and methods
In the process of working on the topic, there was made a retrospective study of the history of the organization and conduct of expeditions aimed at studying and development of the Arctic in the aspects of investigating the motives of researchers and the specifics of organizing expeditions in the conditions of the Far North. The basis of research on the problem of the history of the studying and development of the Arctic were archival and published sources of the late 19th – early 20th centuries. The Saint-Petersburg branch of the Archive of the Russian Academy of Sciences stores a large amount of materials on the history of the organization and conduct of expeditionary studies of the Arctic and Subarctic zones in the late 19th – early 20th centuries. There are official documents, management documentation of scientific institutions and personal documents of employees of the Academy of Sciences among them. In the course of work on the topic of research, the structure and content of the fund of the Office of the Conference of the Academy of Sciences and the journals of meetings of the Board Committee were studied. The use of the historical-cultural and anthropological approach implies the usage of personal documents, so the structure of the documents of the personal fund of the Director of the Mineral Museum of the Academy of Sciences A.F. Gebel (1826-1895) was analysed. Sources for studying the biography and expeditionary activity of H. F. Gebel (1844-1910) were obituaries and lifetime published reporting expedition materials.

In the framework of the humanitarian and system approaches, the research methodology is based on general scientific methods of scientific knowledge, archival, source study, problem-chronological, comparative, historical-genetic (retrospective) methods.

3. Arctic mineralogical studies of A.F. Gebel
The main state institution of fundamental science in the 19th century continued to be the Academy of Sciences, which set the geographic focus of expeditionary researches, and determined the goals and objectives of certain expeditions. The studies of the North-West of the Russian Empire represented a separate line of expeditionary academic research. So, in 1868-1870 the Academy of Sciences supported the mineralogical expedition of A.F. Gebel on the Kola Peninsula and the Ministry of Public Education funded it. The purpose of the trip was to study the natural resources of the arctic and subarctic territories. It was A.F. Goebel, who initiated the organization of the expedition and made a preliminary theoretical study of materials relating to the peculiarities of mineralogical exploitations in the Kola North. This is one of the distinguishing features of the academic expeditions of the 19th century, compared with the previous century, when research was initiated primarily by the government.

Adolf Friedemanovich Gebel was born in Jena in 1826 and was educated at the University of Dorpat. A.F. Gebel, as a bright student who was keen on science, received an offer to move to
Petersburg and work at the Academy of Sciences. April 16, 1854 he was promoted to the rank of titular councillor. In 1861, he became the custodian of the Mineralogical Museum of the Academy of Sciences, where he was engaged in describing the museum’s collections. In 1862, January 16, he was promoted - he became the court counsellor. Adolf Friedemanovich worked very hard to systematize the Kunstkamera’s collections and exhibits that were actively increasing in number in the first half of the 19th century.

Over time, A.F. Gebel found his own scientific interest in research activities: when compiling catalogues, he met information about silver ores on the Kola Peninsula and became interested in this topic. In the Moscow Archive of the Ministry of Justice the scientist examined carefully all the scientific materials about the Saxon chief of ore mines Kurt von Shemberg, who was engaged in the 1730s in mining of silver and copper ores on the Kola Peninsula. “There are much more such documents in the archive, which one could have expected, and I revealed the need to supplement materials for writing in the noted subject with information from documents of the Moscow Main Archive of the Ministry of Foreign Affairs”, wrote A.F. Gebel about his work [3]. According to the results of his work with archival materials A.F. Gebel wrote a scientific paper “Study on the ore resources of the Bear Island in the White Sea and something about the Lapland desert adjacent to it and the mining operations made there”. The work was heard at the Physics and Mathematics Department of the Imperial Academy of Sciences in 1867. For this scientific work Gebel received an award of 500 rubles [4]. The writing was recognised to have not only theoretical but also practical importance. The higher authorities decided to support the three-year expedition project of A.F. Gebel and finance his trips to the Kola Peninsula.

Another distinctive feature which is typical for academic studies of the 19th century was the stating of clear objectives and goals of the expedition. The funds in the St. Petersburg branch of the RAS Archive have preserved a document in German, in which A.F. Gebel formulates research objectives. In total, the scientist identified ten major objectives, given also the preparatory period in Hamburg. From this document it becomes clear that A.F. Gebel planned a three-years phased study of the deposits of the Kola Peninsula [5]. The main purpose of the expedition according to the documents of management and record keeping of the Academy of Sciences was “to familiarize with the geological and metallurgical conditions of the Kola Peninsula - the study of mining and the possibility of its further development” [6].

In the personal fund of A.F. Gebel information about the expedition to Kola is presented fragmentary. Thus, the archive file consisting of separate sheets contains telegrams of A.F. Gebel, which tell that he wanted to send part of the rock samples to Arkhangelsk [7]. In addition, there is preserved a diary of A.F. Gebel, which he filled using the German Gothic font, where the scientist describes the preparations for the trip and the expedition in 1868 itself [8].

More detailed information about the organization of the expedition can be found in the records of the Academy of Sciences. In the minutes of meetings of the Committee of the Board of the Academy of Sciences in 1868 it was recorded that “the Physics and Mathematics Department admits it is useful to send Gebel with a scientific goal abroad and to the Arkhangelsk province” [9]. The Academy of Sciences provided all possible assistance to the scientist. So, for example, a special petition was issued to the Arkhangelsk governor about providing Mr. Gebel with possible assistance in traveling and his scientific practice in the above-mentioned places of the Arkhangelsk province. The scientist planned his stay on Kola Peninsula only for the summer months: June, July and August.

In May 1969, A.F. Gebel made a report on the results of the trip and sent a request to the academic authorities about the need to go again to the Kola Peninsula, since in the previous year he did not have opportunity to visit all the interesting points on the Kola Peninsula due to bad weather conditions. The Academy of Sciences satisfied the request of the scientist and dispatched A.F. Gebel on Kola again, and this was preceded by a 2-week trip to Germany, where the scientist acquired the necessary equipment for the expedition [10]. After visiting Hamburg A.F. Gebel was supposed to go along the coast of Norway and around the Nordcape, then to the Arkhangelsk province. The archival files reveal that during his presence on the Kola Peninsula that A.F. Gebel examined the sites of old exploitations,
took rocks samples, as well as made a description of these places and marked them on the ground with the help of special pillars. Moreover, A.F. Gebel asked local peasants for a small compensation to show these places to those people who could come with a special assignment from him.

The third stage of the expedition, scheduled for 1870, turned out to be extremely unfortunate. The Saint-Petersburg Archival Fund of the RAS preserved the case of “The testimony of the peasants of the Arkhangelsk province about the finding of the mountain engineer Kiryakov, the court counsellor Gebel, the land surveyor Mosov, and the Saxon citizen Tsimerman in tundra beside the river Pyalka in 50 kilometers from the village of Ponoy” which confirms that the carrier who was to deliver A.F. Gebel and his companions from Arkhangelsk to the place of exploitations, landed them in a completely different point of the Kola Peninsula. The researchers were forced to camp. They reported on their plight in the “announcement” of July 10, 1870 [11]. Soon, researchers were discovered and carted away from tundra by the peasants of the village of Pyalitsa. After returning to Saint-Petersburg A.F. Goebel compiled a list of places where mining operations were carried out in the 18th century with their description. Thus, the scientist collected extensive factual material, but this problem did not receive scientific coverage, and there was no practical or theoretical study of old deposits. Most likely, the mineral reserves of these places were much poorer than expected, and given that there were mineral-rich deposits in the vast territory of the Russian Empire, the question of resuming mining was not advisable.

4. Resource studies of H.F. Gebel on the Kola North

Through the efforts of academically educated specialists, thanks to whom the theoretical, material and technical base of Russian science has been constantly improving and invaluable empirical data was accumulated in the specific conditions of polar expeditions, a number of government tasks were implemented in Russia in the 18th – early 19th centuries in order to protect economic and geopolitical interests in the Arctic. After the development of expeditionary activities of the maritime and military departments of Russia at the beginning of the 19th century, and especially since the beginning of the expeditionary research of the Russian Geographical Society, the importance of expeditions organized by the Academy of Sciences itself has been rapidly decreasing, and the forms of its participation in the expeditions of other organizations has become extremely complicated [12]. At this time, initiative expeditions related to the development of industry in Russia were organized, which stimulated the study of domestic natural resources, mainly in the European part of Russia and the comprehensive studies of the extreme northern and arctic regions. They had both practical and, undoubtedly, scientific value. For example, the extraction and smelting of copper historically occupied one of the key positions in the industry of Russia, which supplied all Europe with this non-ferrous metal in the 18th – first half of 19th centuries [13]. Therefore, a private initiative to study possible volumes of industrial copper mining on the Kola Peninsula, which arose in 1905 and required field work, is highly justified. A naturalist ornithologist Herman Fedorovich Gebel (1844-1910) was invited to participate in the reconnaissance expedition as a connoisseur of the Kola North.

Herman (Karl Johan Herman) Gebel was born on May 28 (June 9, N.S.), 1844 in Courland (Latvia) in family of the famous first-class German physician Fedor Gebel. In Libau he studied at progymnasium. At an early age, he became interested in hunting and picking up bird eggs. Later, his passion grew into scientific collecting, and H.F. Gebel became the most famous oologue in Europe and the first in Russia [14]. Herman in 1864 graduated from the 4th course of the Forestry Institute in Saint-Petersburg and went as a taxator (forest technician) to the Arkhangelsk province. In June 1865 he was transferred to a forester in Kiev province. In 1873 he was already promoted to collegiate assessor. In the years 1875-1877 he served as a forester in the Novgorod province. In 1878, he worked for some time at the Zoological Museum of the Imperial Academy of Sciences in Saint-Petersburg. December 28 of the same year H.F. Gebel was elected as a full member of the Saint-Petersburg Society of Naturalists. During these years, Herman Fedorovich began his literary activities and collaborated with the weekly Sunday newspaper Herold, which was published in Saint-Petersburg in German. In 1879, his request for funding an expedition to the North to study the birds of the Kaninsky
Peninsula was accepted – it was his first scientific expedition. The expedition took place, but because of the weather conditions not on the peninsula, but on the Novaya Zemlya archipelago. Along with work in journalism, H.F. Gebel in 1879-1882 participated in the organization of a sawmill near Saint-Petersburg. Then, with equal success, he studied whaling in Norway and organized it in the West Murman in Ura Guba on the island of Heretic. In 1883 and 1884 he sailed in the sea and hunted whales. In 1884, due to his illness, he had to leave Murman and go for treatment to Saint-Petersburg. In 1887 H.F. Gebel retired from the Forest Department. In 1895, H.F. Gebel participated in another expedition to the Arkhangelsk province. Then he again visited the Heretics, where he caught up an idea of herring fishery. Then he went to Norway to learn about the basics and subtleties of fishing. But his herring fishery enterprise end in a fiasco, because in these years, there was not enough herring. In the years 1896-1902 H.F. Gebel continued to spend a lot of time on Murman. He lived in Kola, Aleksandrovsk, often traveled to various areas of West Murman, visited Finland, Notozero, Teriberka, Lovozero, where he was interested not only in birds, but also in forestry, history and economics of the Kola North, wrote about the needs of the local population. In 1904-1909 in the magazine "Russian Shipping", in the years 1909-1910 in "Proceedings of the Arkhangelsk Society for the Study of the Russian North", and in other periodicals, he published articles that later entered the work entitled "Our Lapland". H.F. Gebel collaborated with the Murmansk scientific and commercial expedition, participated in the processing of the materials about fishery collected by the expedition and in the field work of the expedition on Murman and Novaya Zemlya [15].

In 1908, the Arkhangelsk Society for the Study of the Russian North (ASSRN) was organized, which H.F. Gebel entered as a representative of Saint-Petersburg and actively participated in the work of the fishing industry, since it was at the time that he held the position of senior specialist in fisheries and animals hunting in the Arkhangelsk province under the General Directorate of Agriculture and Land Management. In 1909, H.F. Gebel was elected for the post of secretary of the Society's management board and editor of the "News of the ASSRN". Immediately abandoning the post of editor, he was soon forced to resign both from the post of secretary of the board due to poor health. Herman Fedorovich died on July 24, 1910 at the age of 67 in Saint-Petersburg. The wide scientific community has lost in his person a talented naturalist, a serious scientist, a writer, devoted to the interests of the Kola North [16]. Shortly before his death, H.F. Gebel took part in the reconnaissance expedition to the Kola North.

In 1905 the enlightened layers of society in Saint-Petersburg discussed information about the "discovery of very rich deposits of red copper ore in the vicinity of the village of Ponoy" in the central part of the Kola Peninsula [17]. The fact that there were signs of copper in this area was well known by then. And the ownership of the newly discovered reserves was attributed to the "mother (queen) of the lappers". Apparently, we are talking about Tatyana Ivanovna Kukoverova (circa 1830-1919) – a legendary entrepreneur, educator and philanthropist of the Russian North [18]. In the spring of 1905 a certain familiar railway engineer, A.A.N. requested H.F. Gebel "as a connoisseur of Lapland" to assist members of a small expedition, equipped by him in Ponoy to explore the allegedly discovered deposits of copper ore. This engineer has already begun negotiations with their owner about their purchase. H.F. Gebel was skeptical, but the engineer assured him that in the fall of 1904, a mining specialist worked in Ponoy, who found and traced "on the surface in the areas occupied, according to the applications, by Ms. K. lodes of quartz with the evident presence of copper". The engineer was persuasive and provided samples previously found at these sites, "which contained seemingly a really high percentage of copper" [17]. H.F. Gebel was planning a summer trip to Murman to clarify the information collected by the Murmansk Scientific and Industrial Expedition on ichthyology. Therefore, he agreed to accompany members of the expedition to Ponoy at the end of summer – the beginning of autumn. Alongside this at that time he was going to study salmon fishing by "trains" – a specific method of salmon fishing on the river Ponoy. Gebel met Petersburg members of the expedition in Kharlovka on Murman, and on August 30 they arrived at the raid in front of the estuary of the river Ponoy and moved on a boat to the camp Lakhta. There they had to wait for the tide to get...
in a loaded big boat to the village Ponoy during high tide. In Lakhta, Gebel made a short excursion around the camp site, located on the right bank of the river Ponoy, to explore local flora and birds.

In the evening with the onset of the tide, the members of the expedition headed under oars in the village Ponoy, where they stayed for the night, managed to conduct an inquiry of local inhabitants about the location of the sites where copper ore was reportedly found. It turned out that the location of some areas “near the coast of some of the Ponoy feeders, occupied by Mrs. K., no one in the village knew; they knew only about the existence of traces allegedly produced by the British in 1855 during mining works near the Orlovsky lighthouse, where are now put "some milestones” with numbers” [17].

In the morning of August 31, 1905, the expedition, accompanied by a guide and several workers, moved forward in search of ore, crossed the river Ponoy on the left bank. Having moved away to a distance of about 10 miles from the coast of Ponoy, the members of the expedition reached the river Rusenikha, flowing in a deep valley. In 1738, the government transferred copper mines along the rivers Ponoy and Rusenikha to A.K. Shemberg – director of the General-berg-directory for organising a mining enterprise [19]. However, the “Lapland plants” did not last long: because of the lack of ores they were closed and dismantled in 1744 [20]. After having rest H.F. Gebel separated from attendants who headed the east to the White Sea coast, where, presumably, there were two of the occupied ore-bearing sites. He went to the west to find the third site, simultaneously conducting naturalistic observations.

At Orlovsky lighthouse, where the overnight stay was organized for members of the expedition, they heard the results of the surveys. In the old mines, next to which "Mrs. K." placed identification marks, attendants of H.F. Gebel found only "signs of copper ore in the form of thin veinlets". On the morning of September 1, the whole group went to the third of declared places, found by H.F. Gebel the previous day. There was no "properly laid mines, but only a tunnel dug in an inclined direction in the main rock". Remains of dwellings’ foundations and large piles of small fragments of rock with fragments of quartz and signs of copper ore were discovered, indicating that mining operations were carried out in this place, like in mines on the seashore, but they were dated back by H.F. Gebel not to the time of the Crimean company. He determined that mining work there had been stopped more than 150 years ago, i.e. around 1755, since his knowledge of botany made it possible to estimate by annual rings, that the age of creeping juniper bushes was 150 years. And juniper could begin its growth at the threshold of the tunnel only after the mining was terminated there. Also H.F. Gebel suggested that the traces of mining were in “some connection with the legend of the exile of 3 families of Old Believers, the ancestors of the majority of the present population of the village, in the reign of Empress Anna Ioannovna, in Ponoy”. He reasoned that they were not even exiled at all, but simply resettled in Ponoy “as experienced miners for searching and developing copper ore, the existence of which on the Orel Peninsula was somehow recognized in Arkhangelsk” [17]. The expedition for the Gebel attendants ended with such negative results. He stayed in Ponoy for a few more days to observe the fishing of salmon by "trains".

5. Conclusions
In the process of research, heuristic procedures were carried out, which allowed to identify published sources and archival documents stored in the Saint-Petersburg branch of the Archives of the Russian Academy of Sciences, which are sources for the historical reconstruction of the process of preparing and conducting little-known resource expeditions of mineralogist A.F. Gebel and naturalist, ornithologist H.F. Gebel on the Kola Peninsula in the late 19th – early 20th centuries. The revealed archival materials of the fund of the Office of the Conference of the Academy of Sciences and the personal fund of the Director of the Mineralogical Museum of the Academy of Sciences A.F. Gebel represent a multidimensional complex thematic body of sources, consisting of creative, personal, organizational, administrative, protocolar, reporting documentation and business correspondence.

It was determined that the main state institution of fundamental science in the 19th century continued to be the Academy of Sciences, which set the geographic focus of expeditionary researches
and formulated the goals and objectives of specific expeditions. The studies of the North-West of the Russian Empire represented a separate area of expeditionary academic research. So, in 1868-1870 the Academy of Sciences supported, and the Ministry of Public Education sponsored an initiative mineralogical expedition of A.F. Gebel on the Kola Peninsula, i.e. expedition initiated by the researcher.

It is found that at the beginning of the 19th century after the development of the expeditionary activities of the maritime and military departments of Russia, and especially since the start of the expeditionary research of the Russian Geographical Society, the importance of expeditions organized by the Academy of Sciences itself has been rapidly falling, and the forms of its participation in the expeditions of other organizations has become extremely complicated. At this time, private expeditions were organized, related to the development of industry in Russia, which made necessary the study of internal natural resources, mainly in the European part of Russia and the comprehensive studies of the extreme northern and arctic regions. The study presents a historical retrospective of how naturalist, ornithologist H.F. Gebel has organized and conducted this kind of expedition on the Kola Peninsula in search of copper ore.

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