Geological excursions of Grigorii Shchurovskii

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Abstract. The present paper deals with development of popular science and methods of popularization of scientific knowledge in the 19th century Russia with special focus on public geological excursions organized by Grigorii Shchurovskii. He was a reputable professor of geology at the Moscow University and twice was elected dean of the Physical and Mathematical Department. But while his geological research was highly estimated, his ideas of popular science and his concept of popularization as combination of scientific narrative and visual imagery for a long period of time were not too well received by his university colleagues and members of the Moscow Society of Naturalists. This was mainly because of the common belief that persisted well into the 19th century that Russian public was not interested in scientific ideas. Only in the post-reform time Shchurovskii under the auspices of the Society of Friends of Natural Science, Anthropology, and Ethnography got an opportunity to realize his ideas. And his public geological excursions were their first practical implementation. Shchurovskii’s concept of popularization of science has never become the subject of special study and deserves further investigation.

1. Introduction

Public science in Russia started in the end of 1718 – early 1719 when the Petersburg Kunstkammer, the first national museum established under the decree of Peter I, was opened to general public [1]. During the following 150 years the progress in this field was not too impressive. In 1724 the Kunstkammer was conveyed to the St. Petersburg Academy of Sciences and the public functions of the museum were kept to a minimum.

The second museum that opened its doors to public in 1806 (though once a week and only for several hours) was the Natural History Museum of the Moscow University [2]. Unfortunately its collections were partly destroyed by the 1812 Moscow Fire, partly lost in evacuation. And though soon they were recovered thanks to numerous donations of Russian and foreign naturalists, its public function was restored only in the 1860s [3].

Meanwhile in the end of the 18th – the first half of the 19th centuries other forms of popularization of science were taking shape, including publication of popular books (predominantly translated from French and German), appearance of some not numerous popular periodicals, and organization of public readings. In the middle of the 19th century yet new forms were developed. The most significant among them were exhibitions (agricultural, acclimatization, ethnographic etc.) and public excursions. The present paper deals with the history of the first public excursions organized in Moscow in the 1860s by Grigorii Shchurovskii, professor of geology at the Moscow University as practical realization of his concept of popular science.
2. Materials and methods
The present paper is based on comparative historical analysis of various published sources dealing with the life and activity of professor of the Moscow University and the first president of the Society of Friends of Natural Science, Anthropology, and Ethnography Grigorii Shchurovskii (1803-1884) who was renowned not only for his geological research but also for his contribution to popularization of science in Russia and his popular public geological excursions. The sources studied may be grouped as follows: general works on the history of natural science in Russia in the 18th – 19th centuries; biographies of Shchurovskii; materials concerned with his popularization activity, including minutes (both published and archival) of the Moscow Society of Naturalists and Society of Friends of Natural Science, Anthropology, and Ethnography (OLEAE in Russian initials) and proceedings of the first Congresses of Russian Naturalists.

3. Grigorii Shchurovskii: A brief biography
Grigorii Efimovich Shchurovskii was born in Moscow on January 30, 1803. His family was very poor, so his mother put the newborn child into the Moscow Orphanage where he was given a new last name Shchurovskii derived from the name of a Moscow merchant Shchurov who donated the Orphanage [4]. The Moscow Orphange was unique in the sense that it gave its fosterlings a possibility to receive good classical education in its gymnasiums and even paid for the medical education of the most gifted children at the Moscow University or Moscow Affiliation of the Medical and Surgical Academy. So, in 1822 after eight years in the Orphanage’s gymnasium Shchurovskii was admitted to the Medical Department of the Moscow University. At that time among professors of the Department there were such famous names as therapeutists M.Ja. Mudrov and E.O. Mukhin, anatomist and surgeon, personal physician of the Tsar Alexander I J.Ch. Loder, surgeon A.A. Alfonskii and many others. In addition to their courses Shchurovsky also attended lectures of agriculturist and philosopher M.G. Pavlov, naturalists I.A. Dwigubskii and M.A. Maksimovich at the Physical and Mathematical Department. The latter professors greatly influenced his interest in natural science.

In 1826 Shchrovskii graduated from the University. During the following six years he earned his living at first as a tutor and since 1828 – as a teacher of physics and natural history and as attending physician at the Moscow Orphanage. In 1829 he received his Doctor of Medicine degree for the thesis on ethiology, diagnostics, and therapy of erysipelas [5] and in 1832 returned to the the University. He was assigned as a lecturer of natural history at the Medical Department and of mineralogy (since 1834) at the Physical and Mathematical Department. In 1835 he was offered a chair in mineralogy and geognosy which he occupied till his retirement in 1880. In 1848-1849 and 1860-1863 he hold a position of the dean of the Physical and Mathematical Department of the University. In 1863 he was elected president of the Society of Friends of Natural Science (since 1867 – Society of Friends of Natural Science, Anthropology, and Ethnography).

Shchurovskii’s scientific activity may be divided into two periods: the first one (1826-1835) was mainly concerned with zoology and comparative anatomy, the second (1835-1884) – with geology and popularization. The question why in the mid-1830s he suddenly abandoned zoological research and turned to geology is not clear enough. According to B. Raikov, after the end of the famous discussion between G. Cuvier and É. Jeoffroy Saint-Hilaire at the Paris Academy of Science Shchurovskii as an advocate of transformist ideas of the latter was afraid for his university career and preferred to switch to a new field of research [4]. He devoted to geology about fifty years of his life and was credited to be the founder of the Moscow geological school. During this period he undertook two geological expeditions to the Urals (1838) and Altai (1844) and published numerous works on various aspects of geology, including regional and field geology, stratigraphy and tectonics of European Russia, hydro- and palaeogeology, etc. He was also one the first Russian historians of this science.

4. The Society of Friends of Natural Science, Anthropology, and Ethnography
In the middle of the 19th century Shchurovskii was one of the most reputable professors of the Physical and Mathematical Department of the Moscow University and was twice elected dean of the
Department. But he did not limit himself to the frames of academic science and strongly supported the necessity and importance of public science in Russia. He even published several popular articles on some questions of geology in M.N. Katkov’s “Russian Herald” [4]. But his ideas of popularization of natural science found little sympathy among his university colleagues and educated public as a whole since conventional wisdom of the time stated that Russian people were not interested in science. The hope to find support at the Moscow Society of Naturalists (MOIP in Russian initials) also appeared to be in vain. The initial spirit of Enlightenment that prevailed in MOIP at the start (it was established by the Moscow University in 1805 and was patronized by one of the eminent representatives of the Russian Enlightenment, then the curator of the University M.N. Muraviov) by the middle of the century had given way to carefully cultivated atmosphere of elitism and leaders of the society were not interested in any popular projects [6].

The situation changed in 1863 when a young professor of zoology Anatoli Bogdanov reached out to Shchurovskii for advice and assistance. He wanted to found by the University a natural science association of a new type, with wide membership of professional scientists, amateur naturalists, sponsors, and common people who were eager to help the society in realization of its projects. The main goals of the new society included natural-historical exploration of the Moscow region (in perspective – the whole territory of Russia), on the one hand, and promotion of natural science among general public and popularization of scientific knowledge, on the other. But Bogdanov’s project faced strong opposition on the part of MOIP backed up by the University curator D.S. Liouvshin (later he changed his opinion). At that time MOIP’s activity was on the wane and its leaders were afraid to lose scientific and financial competition with the young and active society. Moreover, they considered the project as a mere youthquake, too egalitarian, hence disastrous for Russian science [6].

It was clear to Shchurovskii that Bogdanov’s views on popularization of science were very close to his own and that this project would be a good chance to realize his own ideas of popular science, so he agreed to support the project. He was joined also by the Chancellor of the Moscow University S.I. Barshev and some professors. This clearly demonstrated that Bogdanov’s project was not a mere youthquake, as its opponents insisted, and helped to overcome administrative problems at the University. So, shortly afterwards regulations of a new society named the Society of Friends of Natural Science were approved by the Ministry of Education and on May 14, 1864 at the inaugural meeting Shchurovskii was elected the first president of the society and held this position for twenty years till his death in 1884. His cooperation in OLEAE with Bogdanov, who was the informal leader of the society, proved to be very fruitful for the progress of public science in Russia. OLEAE developed its popularization efforts along different lines: popular editions, public readings and excursions, scientific exhibitions and public museums. Bogdanov and other members of the society were involved into all forms of activity except for public excursions. That was Shchurovskii’s domain.

5. Public excursions

Obviously, excursions as means of natural-historic exploration of certain localities were not at all new to Russian scientists. Excursions were practiced at the Moscow University since the beginning of the 19th century. They were arranged by professors of natural history or botany, e.g. G. Fischer von Waldheim [7], I. Dvigubskii [4], and some other, for their students (usually the best ones) and pursued two main goals: scientific – collecting of natural objects of a certain locality, and educational – mastering of students’ skills of field work. OLEAE, which pursued a wide range of academic interests from zoology and geology to anthropology and ethnography but unlike MOIP and other reputable scientific societies could not reckon upon financial aid from the state during its first years had to limit its activity to excursions around Moscow parks and gardens and the nearest vicinity of the city. The main goal of these excursions was research and collecting, but it also had an educative aspect for those members of the society who had not received an appropriate training, e.g. students of geology who were not acquainted with methods of zoological collecting [8].

Shchurovskii was well aware of all this: he regularly arranged geological excursions for his students and took part in some excursions organized by OLEAE. But in his idea of public excursion he
moved further and by placing this routine activity into a new context turned it into an effective tool for popularization of scientific knowledge, both enlightening and catchy. In this case it was geological knowledge but conceivably meant the knowledge of nature as a whole.

He outlined his views concerning public science in his address to the First Congress of Russian Naturalists in St. Petersburg entitled “On accessibility or popularization of natural sciences” [9]. He assumed that social realms of the time were demonstrating “universal tendency to destroy guilds or castes in all their forms and manifestations, in whatever guise they come, with their exclusive privileges and closeness. Our natural sciences are of the same nature, the nature of accessibility and popularization; they rush from, so to speak, scientist’s office to become a public property of peoples”. But, according to Shchurovskii, existing public institutions and methods of popularization don’t cope with the situation. Popularization to be effective has to combine scientific narrative with appropriate visual imagery. While popular literature is poor in visualization and public museums lack sufficient narrative, public excursions give a reasonable balance between the both. Moreover, as compared to museums, which present nature in a somewhat piecemeal manner, excursions are held in natural environment and thus can give a full and easily comprehensible picture of natural objects and structures (like viewing a piece of porphyry in a museum collection versus impression of a real porphyry mountain).

It should be noted that Shchurovskii was an ardent proponent of Russian science. Not in the chauvinistic sense that it represented an original phenomenon that had nothing to do with European science. On the contrary, he was sure that it was an integral part of the world scientific process. His point was that natural sciences in Russia should explore local nature, present local natural objects in public museums, and describe them in Russian (at the urging of Shchurovskii OLEAE even set up a committee on Russian scientific terminology). He considered that popularization of scientific ideas on example of close and familiar nature was much more comprehensible and easy-to remember than admiration of exotic collections from far-off countries. And in this respect public excursions should play a leading role.

Shchurovskii arranged his geological excursions as follows [9]. In the days prior to an excursion he published an advertisement with indication of date, time, and locality of the excursion and short explanation why this locality was interesting from geological or practical point of view. When people gathered he took them on a guided walk through the countryside showing interesting geological sites and objects and explaining with the help of the cases in point geological terms and ideas. During each excursion he tried to advert to various matters from geological structure of the Earth and changes that the locality survived to different stones, rocks, and fossils and their qualities, methodology of geological collecting etc. At the end he resumed the results of the excursion putting them into general context of fundamental geological knowledge. After that he answered numerous questions and explained things that remained obscure to the participants. In this he was aided by his senior students who also demonstrated methods of collecting geological and mineralogical objects to all who got interested in that.

The latter was an important point in Shchurovskii’s popularization program. He argued that “On the vast areas of Russia there are, without any doubt, a lot of people who are well educated and not indifferent to the surrounding nature. Driven by their curiosity they make many observations and investigations, but these observations and investigations largely go for nothing, without any trace or at least are not of use they might be if they were made with a clearly acknowledged purpose and according to accepted procedures” [9]. To improve the situation he compiled a concise advisory on collecting of geological objects [10] which was published by OLEAE and was sent on request to amateur geologists. Later on similar advisories on vertebrate zoology, entomology, botany, paleontology, etc. were prepared and OLEAE widely used them in its large-scale popularization projects.

Shchurovskii’s geological excursions were very popular and gathered up to two hundred participants and even more [9]. People coming to excursions were of different gender, age, social and
educational standing and Shchurovskii managed to keep them interested over the whole course of his explanations (not without reason many of his contemporaries mentioned his gift for narrative).

6. Conclusion
Professor at the Moscow University Grigorii Shchurovskii was one of the most fervent advocates of popular science in Russia. His public geological excursions well known in Moscow of that time deserve attention not only because they were the first in the 19th century Russia and paved the way to mass natural science excursion of the Soviet period. It’s more important that his notion of popularization based on combination of traditional scientific narrative with visual imagery in some ways predated modern approaches to popular science.

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