Scientific societies and exploration of the territory of the Russian empire

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Abstract. In the nineteenth century scientific societies being nongovernmental voluntary associations of professional as well as amateur scientists were the leading institutions of Russian science. However, their role in the scientific, social, and cultural life of the country is essentially underestimated. This especially refers to the societies seated outside Petersburg. The present paper discusses the key characteristics that facilitated adaptation of the societies to the cultural realities of the nineteenth century Russia and fostered their research and educational activity. Special focus is given to the contribution of the societies to the exploration of the territory of the country.

1. Introduction
In the eighteenth century Academy of Sciences created by Peter the Great played the dominant role in exploration of the territory of Russia, its natural and human resources. Large-scale expeditions headed by members of the Academy (G.F. Muller, J.G. Gmelin, S.P. Krasheninnikov, P.S. Pallas and others) were sent to different parts of the empire. Materials collected by these expeditions “enriched every branch of natural science from mineralogy and botany to meteorology and local geography, including valuable ethnographic and demographic material and useful information on agricultural techniques, human and animal diseases, and local arts and crafts” [1].

In the nineteenth century the leadership in arrangement of academic expeditions passed to scientific societies, which managed to extend their research activity to the whole territory of the country. Usually the Russian Geographical Society (RGO in Russian initials) is credited to be the main actor in exploration of the territory of Russia. Indeed, this society founded in 1845 and seated in Petersburg was one of the largest and the most prestigious and only few Russian scientific associations could be on par with it. RGO had a number of affiliations all through the country and supported a whole series of large-scale expeditions to the Urals, Siberia, Kamchatka, the Far East, the Caucasus, and so on. In this respect, expeditions of numerous provincial natural history societies, while no less important, were not so impressive and famous and their contribution still remains underestimated. Most of these societies didn’t survive the 1917 revolutions or were dissolved during the first two decades of the Soviet power and, as a consequence, were of little interest to historians of science. Matters were made worse by the fact that Soviet and modern Russian historiography holds to the view that scientific societies as such represent an archaic type of scientific institutions, which do not meet the needs of modern science [2] and deserve serious attention. In recent years, however, history of scientific societies has gained certain attention. New studies not only broaden our knowledge of societies’ activities and their contribution to the progress of Russian science but also make us reconsider our understanding of the history of scientific
societies and their role in social and cultural developments [3–5]. The present paper deals with those neglected by historians scientific societies and their contribution to natural history exploration of the territory of Russia.

2. Materials and methods

The present paper is based on published sources concerned with activity of various scientific societies that were accumulated in the course of research. The sources fall into two slightly overlapping groups. The first includes minutes of scientific societies (most of them had limited circulation), jubilee publications on societies and biographies of their leaders, materials of naturalists’ congresses etc. The sources of this group were used to reconstruct actual scientific contribution of the societies. The second group of sources is represented by publications of more general character (history and sociology of Russian science and scientific institutions, history of Russian civil society, etc.). These were analyzed with regard to their assessment of the role of societies as institutes of science as well as contribution of individual societies to Russian science and culture.

3. General description of Russian scientific societies

The Scientific society is a voluntary association of intellectuals who seek to promote certain academic disciplines or scientific ideas. In Western Europe the first associations of the kind appeared in the seventeenth century: Accademia dei Lincei (Italy, 1603), Academia Naturae Curiosorum (Germany, 1652), the Royal Society of London (Great Britain, 1660), etc. In Russia they, understandably, were established much later. Just as the Russian Academy of Science they were modeled after European institutions and adapted to local contexts. While the first scientific society was founded in Russia as late as in the last third of the eighteenth century, by the middle of the following century they had already occupied the leading position in Russian science, both fundamental and applied, as the most enterprising and efficient scientific institutions and at the beginning of the twentieth century there were registered more than three hundred scientific societies, not to mention numerous medical societies and more than five thousand agricultural association, a certain part of which were involved in scientific research. Rapid increase in number and growth in influence of scientific societies was fostered by a number of factors [6]. Firstly, societies, as distinct from the Academy of Science, were nongovernmental associations and this gave them relative freedom in formulating scientific policy and realizing their research and education programs. Secondly, elected society members included not only academic scientists, but also amateurs – school teachers, military men, physicians, public officers, country gentlemen, who were interested in scientific ideas and natural history observation and research. This was very important, since even in university cities of the period scientific community was thin. Thus, recruitment of amateur scientists was inevitable: it made it possible to realize certain ambitious projects and establish a really working scientific body. Thirdly, philanthropists, who were not involved in research activity but were ready to support societies financially, were also elected full members. And this provided means of existence for the societies and their research and educational programs, equipping expeditions, establishing research stations, educational centers, and research laboratories. As for philanthropists they received honorary awards and titles in exchange to their donations.

Among the nineteenth century Russian scientific associations societies of multidisciplinary type prevailed [6]. Their interests stretched over a wide range of disciplines from zoology, botany, and geology to ethnography, archaeology, and rural economy. Selection of the disciplines varied from society to society and sometimes changed in the course of time. Besides, research work of most societies was geographically confined to the areas of their location (educational district, governorate or even uezd). Practically speaking regional or local multidisciplinary societies were best adapted to the needs and national circumstances of Russian science. Only in Petersburg the situation was quite different. The capital was the place where the Academy of Science resided and where Russian academic and intellectual elite was concentrated, so specialized scientific societies closely cooperating with the Academy were the predominant type. They had been appearing here since the first quarter of the 19th century. The first of them, St. Petersburg Mineralogical Society, was established in 1817. It was
followed by the Russian Geographical Society in 1845, Russian Entomological Society in 1859, and later on by some others. Only in the end of the 19th – beginning of the 20th century the serious demand for specialized societies was universally recognized and new societies of this type were being established both in the capital (Russian Anthropological Society, 1888; Russian Botanical Society, 1915; Russian Paleontological Society, 1916, et al.) and provincial towns. By the way, regional dimension was still present, e.g. in addition to the reputable Russian Entomological Society in 1913 Moscow Entomological Society was established.

4. The Free Economic Society
The Free Economic Society (VEO in Russian initials) or to use its full title The Imperial Free Economic Society for Advancement of Agriculture and Economy in Russia must be mentioned in the context of the present paper though formally it belongs to the group of agricultural societies. The point is that in some ways this society predetermined further development of scientific institutions in Russia and served as a model for other societies, both fundamental and applied. VEO was the first voluntary scientific association in Russia. It was founded in Petersburg in 1765 on the initiative of a group of landowners and high-ranking civil servants and with support of the Empress Catherine II. The latter granted her patronage and financial assistance to the society and full-dress uniform of imperial design to its members. Constitution of the Society chartered by the Empress made VEO the first independent public association of tsarist Russia. This was an important political innovation, though its significance has not been fully appreciated yet [3, 4].

Aims of the society were predominantly practical: “Like its Western models, the Free Economic Society was devoted to the improvement of agriculture through the spread of advanced technology, methods of sanitation, and economic knowledge” [7]. Nevertheless, VEO managed to successfully combine applied and fundamental research – a tradition that was followed by most Russian societies. For example, beginning with 1877 VEO was supporting V.V. Dokuchaev’s travels to the Black Earth Region and his further studies of black soils (chernozems). As a result Dokuchaev created a schematic pedological map of the Black Belt of European Russia and published in 1883 his fundamental work “Russian Chernozem”, in which he laid the basis for a new scientific discipline, soil science [8].

5. Natural history societies
The idea of independent natural history associations was taken by Russian universities, the more so that the 1804 university charters authorized universities to establish learned societies. Since in Russia of that period the only fully functioning university was the Moscow one, while others (in Petersburg, Kazan, and Kharkov) were still nascent, no wonder that the first societies appeared in Moscow (an attempt to organize the Society of Sciences in the Kharkov University in 1812 was not a success). Two Moscow natural history societies were established several months apart in 1805. The first was the Society for Competition of Medical and Physical Sciences (since 1846 – Physical and Medical Society), the second one was the Moscow Society of Naturalists (MOIP in Russian initials).

The Society for Competition is usually referred as medical society but during the first decades of its existence its research were mostly devoted to natural history and largely overlapped with those of MOIP. They included physical and medical description of cities and other locations of Russia; meteorological observations in Moscow and its vicinity; examination of mineral springs of the Moscow governorates and some other localities, including the Caucasus; collecting of plants, especially medicinal, of the Moscow area, etc. [9]. Later the society turned mostly to medicine.

MOIP stated its principal mission as the natural-historical exploration of the territory of Russia for the purposes of advancement of agriculture and trade. As the society was based in Moscow it gave special attention to the study of the Moscow Governorate and its natural resources and developed an ambitious program of local research. Though this program was not realized in full measure, some of its results were published in 1837 in the fundamental “Oryctographie du gouvernement de Moscou” by the first director of MOIP J.G. Fischer von Waldheim. This work contained general geographic and economic description of the Moscow Governorate and materials on geological, mineralogical, and
paleontological research of the area. However, the work of the society was not limited to the exploration of the Moscow region alone. In the first half of the nineteenth century MOIP actively sponsored numerous expeditions to different areas of the country. Thus, in 1806-1812 members of MOIP travelled to Transbaikalia and Kamchatka (I.I. Redovskii), to the Urals, Altai, and Transbaikalia (F.M. Tauber, G.F. Helm, J.W. Mohr), to the southern and south-eastern governances (F.W. Londes, A.M. Tauscher), to the Caucasus (B.Ch. von Vietinghoff). Unfortunately, the most part of the collections gathered during these expeditions were destroyed in the 1812 Moscow fire. The largest and the best known of MOIP expeditions of the period was that of Russian naturalist G.S. Karelin and young botanist I.P. Kirilov to Altai and Dzungaria in 1839-1841. During their travel Karelin and Kirilov gathered vast collections of plants, insects, and minerals and made geographic description of these far-off and poorly known lands [10]. For MOIP the expedition was both a success and a failure. The society gained wide popularity among Russian and European naturalists but was nearly ruined financially, so that beginning with the 1850s it stopped sponsoring expeditions and its activity was basically confined to regular monthly meetings and publication of the society’s proceedings.

These circumstances by no means implied that scientific societies had lost their leading positions in Russian science. In the 1860s a new generation of university societies came on the scene. They were established according to the 1863 university charters and were aimed at regional research of certain educational districts. It should be noted that educational districts were established in the course of the 1803 educational reform of Alexander I and usually included from three (Dorpat Educational District) to fifteen (Caucasian Educational District) governances and oblasts.

The first society of this type was the Society of Friends of Natural Science (since 1867 – Imperial Society of Friends of Natural Science, Anthropology and Ethnography, OLEAE in Russian initials) associated with the Moscow University [4, 11, 12]. However, even earlier, in 1853, the Dorpat Society of Naturalists, aimed at natural-historical exploration of Livonia and neighboring governorates, was established but formally it was not an individual society but an affiliation of the Livonian Welfare Economic Society. OLEAE was founded on October 15, 1863 on the initiative of professor of zoology of the Moscow University A.P. Bogdanov and declared its mission as the “natural-historical exploration of the governorates of the Moscow Educational District and promotion of natural science among the mass of the public” [13]. The district in question was one of the largest and included about ten governorates (Moscow, Vladimir, Kaluga, Kostroma, Tier, Tula, Yaroslavl, Smolensk, Ryazan, Orel, and Nizhniy Novgorod). At first, because of insufficient funds, the society could not cover this whole territory with its research activity and geography of research was limited to Moscow and its nearest vicinity but soon it expanded to more distant uezds of the Moscow governorate and even to the neighboring governorates. OLEAE arranged excursions to collect local fauna and flora and popular public geological excursions (these were headed by the first president of the society, geologist G.E. Shchurovskii), undertook systematic excavation of kurgans for anthropological purposes. To attract more people to the excursions the society issued concise advisories on collecting various natural history objects (various animal groups, especially insects, plants, minerals, paleontological objects and even human skulls and bones). The advisories were addressed not only to OLEAE members but to everyone who was interested in natural science and were widely disseminated. So soon enough OLEAE acquired a lot of correspondents all over the country who sent their collections to the society. Besides, from the start OLEAE was active providing science popularization projects, including large-scale Moscow scientific exhibitions (Ethnographical, 1867; Polytechnical, 1872; Anthropological, 1878) and this made it widely known in Russia and abroad and consequently gave additional opportunities to expand exploration activity. For example, the famous A.P. Fedchenko Turkestan expedition of 1868-1872, the largest of OLEAE expeditions, was organized after the 1867 Ethnographic Exhibition on the initiative of Turkestan Governor-General K.P. von Kaufmann, who was deeply impressed by OLEAE and its exhibition. This was the first time, when the society got an opportunity to move beyond geographical and administrative boundaries outlined in its constitution. Later on it sponsored many expeditions (zoological, botanical and even ethnographical and anthropological) covering with their research a great
part of the territory of Russia and initiated some important programs, e.g. the study of freshwater lakes of European Russia, the study of Russian seas (Black, Baltic, White), etc.

Contribution of OLEA to the progress of scientific research and education in Russia was highly appreciated at the First Congress of Russian Naturalists, held in Petersburg on December 28, 1867-January 4, 1868. The Congress solicited the Ministry of National Education that all Russian universities should found scientific societies on the model of OLEAE [14]. This idea was approved by the Minister and during the next few years naturalists’ societies were established in the universities of Petersburg (1868), Kiev (1869), Kazan (1869), Kharkov (1869), and Odessa (1870). Later similar societies appeared in the Warsaw (1888) and Tomsk (1889) universities. All the newly organized societies took over the task of exploration of the territories of respective educational districts. These territories differed in size (the largest including the southern part of European Russia and Siberia accrued to the Kazan Society), as well as climate, relief, hydrography, natural resources, and this obviously shaped the main trends of their research work. For example, among the major contributions the Petersburg Society of Naturalist were exploration of the seaboard of the Barents and White Sea, the first large-scale hydrobiological research of the Kola Bay (Barents Sea) on the schooner “Aleksander Kovalevskii”, establishing of a number of marine research biological stations in Solovetsky Islands, in the Kola Bay etc. The Kazan Society of Naturalists focused on Povolzhie and the Caspian Sea region and in addition to geological, botanical, and zoological research paid serious attention to the ethnography of local peoples and prehistoric archaeology.

We have to mention also local natural history societies (Society for the Exploration of the Yaroslavl Governorate in Natural History Relation, Ural Society of Friends of Natural Science in Yekaterinburg) and numerous local history societies established in provincial cities anduezd towns. Their resources and possibilities were obviously lesser than those of larger societies but they played a significant role on the Russian scientific scene. They worked in close cooperation with university and specialized natural history societies, as well as with many well-known Russian scientists and vast collections of local fauna, flora, minerals etc. accumulated in local societies contributed greatly to natural history knowledge of the Russian empire.

6. Conclusion
Most of natural history societies survived the World War I, 1917 revolutions, and the Civil War and resumed their activity under the Soviet power, successfully adapting to the new political and social realities, but the “one field of science – one society” reform of the late 1920s put an end to the existence of scientific societies as fully functional scientific institutions. Some of them were closed, some merged with other societies or state scientific institutes and those which survived were deprived of their research facilities such as research stations, laboratories, and institutes. Besides, they were forced to abandon their traditional activities like organization of expeditions (this function was passed to the Academy of Sciences). So the question still remains: were scientific societies really unable to meet the needs of modern science or their dissolution was politically and ideologically biased.

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