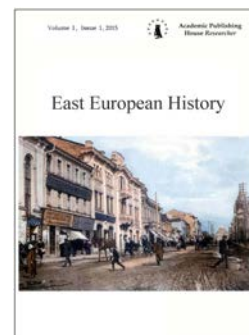


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Organization of environmental preservation activities in Russia (based on materials by I. I. Sprygin)

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Abstract

The article deals with the genesis of environmental preservation activities in Russia, based on sources of one of its pioneers, an ecologist and botanist, Ivan Ivanovich Sprygin (1873–1942), a native of Penza region. The scientist worked on local history methodology, social ecology and environmental management, although he didn't use the definition of the "environmental management" in his work, since it had not yet been introduced into the scientific circulation. The terms "nature preservation" and "environmental management" were registered in the reference dictionary of N. F. Reymers (1990).

The scientific expedition activities of I. I. Sprygin took place mainly in central Russia, in the most densely populated forest-steppe part of the East European plain, east to the Dnieper river valley.

I. I. Sprygin regarded to the natural science facts as the integral parts of the geographic environment, constantly consumed by man. The researcher proved, that the irrational consumption would lead to depletion and destruction of nature, therefore, the population should be engaged in protection and preservation of the nature potential.

I. I. Sprygin participated in the organization and activities of the Penza Naturalists Society, Penza Natural Sciences society, local Lore museum, Scientific Archives committee, Botanical Garden, herbarium and etc, who were engaged in accumulation and systematization of social and economic history of the region data, gathering material cultural artifacts, the study of natural and historical regional conditions, nature knowledge propaganda and etc.

Keywords: Russia, nature preservation activities, nature preservation, environmental management, I. I. Sprygin, East European plain, Penza region.

1. Introduction

Environmental preservation is one of the priority problems of mankind. Hitherto at present we failed to establish an efficient mechanism of environmental management, and therefore the history of origin of the environmental preservation activities, the views of its founders, appear to be quite relevant in modern conditions.

One of the founders of the environmental, nature preservation activities in Russia was an ecologist and botanist, I. I. Sprygin, a native of Penza region (1873–1942). (Fig. 1). A famous

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Russian geo-botanist, environmentalist, bio-geographer A. G. Voronov described I. I. Sprygin as a great scientist, a great founder of local lore studies in the Penza region: «... Ivan Ivanovich was engaged in an unusually extensive range of problems. Problems of vegetation, its combinations and connections with habitat. Problems of ecology of certain species and species groups...» ([Scientific, 1986: 19](#)).



Fig 1. Ivan Ivanovich Sprygin

2. Materials and methods

2.1. The source base of this research consists of the works of the scientist himself in the first place ([Sprygin, 1896](#); [Sprygin, 1931](#); [Sprygin, 1938](#)). The peculiarity of studies of the heritage of I. I. Sprygin includes the fact that in his published works there are comparatively few general and specific methodological statements and educational approaches, which should be used by researchers of environmental and population problems as scientific concepts. His works are the embodiment of living observations of natural and social components of the geographical area and the human living environment; properly captured facts, logically and systematically generalized, thoroughly studied and interpreted reasonably.

The most important source for the studied subject is the State archive of the Penza region documents (SAPR, F. 2378 – the documents of I. I. Sprygin, L. I. Sprygin, G. S. Kalantarov, a collection of manuscripts, press and illustrative materials on history of Penza and the Penza region; F. 285 – the Penza local Lore Museum archive documents collection, F. 2358 – a collection of documents of B. P Satserdotov).

The monograph sources and scientific articles were also used.

2.2. The major methodological principle of the study of the origins of environmental (reserving) activities in Russia and I. I. Sprygin's participation in that process is a systematic approach, which made it possible to consider the evolution of the views of experts and of Russian society in general on the problems of ecology, nature preservation and environmental management holistically, as well as in the Central Chernozemny region of Russia, in development and in conjunction with internal processes, in the context of the whole national reality in late XIX – early XX centuries. Historical and genetic methods made it possible to consistently describe the evolution of views and activities of I. I. Sprygin on the regional level. Moreover, the study was conducted on the basis of common methodological principles of historicism and objectivity, which are based on the knowledge that the historical reality is multidimensional and contradictory, and the work of I. I. Sprygin was determined by certain historical conditions, first of all, by the change of the government.

3. Discussion

The participation of I. I. Sprygin in the organization of environmental preservation activities in Russia was raised episodically in the scientific literature, in the context of study of activities and views of the researcher (Lebedev, 1998; Satserdotov, 1958; Solyanov, 1974; Sytin, 1930).

As a person I. I. Sprygin was featured in articles and memoirs of his employees and associates, in the academic «Scientific biographies» book series of his daughter, L. L. Sprygina (Sprygina, 1982).

Certain information relating to the research topic is contained in works, dedicated to Penza Natural Sciences society, (PNSS) (Feature article, 1915; Anniversary, 1958; Tustin 1998), Scientific Archives committee (Proceedings, 1903–1905; Khvoshev, 1922 and others).

However, although there is some groundwork on this issue, the subject requires an in-depth and systematic study.

4. Results

The spheres of interests of I. I. Sprygin included methodological problems of local history, social ecology and environmental management. The difficulty lies in the fact that he did not leave any specific published works on local history methodology; the notion and definition of the term "environmental management" were absent in his works, since they just were not included in the scientific vocabulary. Basically all of the problems characterizing contents of these concepts entered in the definition of "nature protection". Only after the appearance of a reference dictionary, compiled in 1990 by N. F. Reymers (Reymers, 1990) rather clear definitions of "nature protection" and "environmental management" concepts emerged.

By the end of the XIX century Penza environmental local lore studies had accumulated a significant amount of lore facts, not only of local, but also of the national importance, fund of knowledge and information which reflected the environment and society life. They were accumulated in the form of material cultural artifacts, as well as in the variety of observations, findings, evaluation, oral tradition, statistical reports and other materials, demanding verification, assessment and compilation for the purpose of their rational use. However, the uncertainty of the concepts behind certain cultural objects and complexes of the human environment, gave rise to uncertainty of scientific conclusions of ecological local history studies, making the efforts to compile the entire fund of knowledge difficult. The disorder of this huge ecological and local lore particular region fund was already understood by the advanced naturalists, scientists, historians and geo-botanists. Constantly there were calls for their generalization on the standards of regulations and rules of natural history, part of which by this time had already been discovered in the works of A. Humboldt (Humboldt, 1849; Botting, 1973; Scuria, 1980), V. V. Dokuchaev and others. I. I. Sprygin was one of the initiators and founders of the Society of Naturalists, which in May 1905 grew into the Natural Sciences society.

The Local Lore Museum, The Scientific archival committee, the Botanical garden, the herbarium, a wild life preserve system and school museums were created and successfully operated with the active participation of I. I. Sprygin. The establishment of the scientific archival committee in 1901 in Penza launched the collection and systematization of the factual material, which characterized the interaction experience of the Penza Region population with its environment (Local lore, 1992: 5). The Committee tasks included, along with the registration, examination, evaluation and preservation for posterity the most important facts of social history, economy, culture and management experience, gathering and forming a collection of cultural material objects. The objectives of PNSS and the museum were the study of natural-historical conditions of the region, the promotion of knowledge about the environment.

In the field of research interests of I. I. Sprygin were forest and steppe interactions on their boundary areas, or as they say, "the forest and the steppe struggle", the advance of the steppe plant communities on the forest ones and vice versa. As I. I. Sprygin revealed, the main reason for advancing of the steppe was the strengthening of aridity, and forests' advance was caused by the humidity of the climate. Back then he had already noted an increase in the overall aridity eastbound to Central Russia. Naturally, in this process, one of the active forces was the human activity. First it was the destruction of forest vegetation by axe and fire by individual sections among the arrays of solid forest in order to clean them out for cattle grazing and plowing. Later, with the increase of the density of the population, the plowed area also increased.



Fig. 2. Penza Natural Sciences society (PNSS) founders (A. N. Magnitsky, F. F. Fedorovitch, I. I. Sprygin).

The science in development by that time did not suggest any ready methodological recipes for solving the problems of local lore. The "comparative method" was in the first place in the nature and society sciences. The enthusiasts-founders of the scientific study of local lore, in starting the comprehensive study of the region, based on two interrelated methodological principles – chorological (geographic) and chronological (historical), which determined the direction of understanding and using of the empirical facts. The first one determined the order of the spatial approach to any regional phenomenon, giving recommendations for its description and study; the second defined the procedure of the regional effects study in time, allowing the set of empirical observations to be brought to the abstract time line. All of these methods were equally used by I. I. Sprygin. As noted by B. P. Satserdotov, «Even the early botanical works show I. I. Sprygin's great respect to statistics and mathematics. His quantitative evaluations of real facts were always made on the level of the most advanced scientific views» (Scientific, 1986: 19). His appeal to the measurement and accounting, calculations and comparison enabled him to consider the proportions of plant communities' objects, their structure and history of development more demonstratively, to track and take into account the effect of a particular factor on all the vegetative community. The start of the active scientific and pedagogical activity of I. I. Sprygin coincided with the beginning of the XX century. By that time in the works of the world-known scientists and naturalists of J. B. Lamarck, A. Humboldt, E. Kant, E. Reclus, V. V. Dokuchaev and others, alarming notes were made, warning about the occurrence of the negative consequences of the unwise human impact on nature. It must be said, they started to get more and more real. As early as in the 80-90-ies of the XIX century, Russia was swept by a wave of the drought years, poor harvests and famine. Especially negatively they manifested in the central part of Russia, on the territory of the most densely populated forest-steppe part of the East European Plain, to the east of the Dnieper river valley. Those were the areas where the scientific expeditions of I. I. Sprygin took place. The greatest natural scientists of the late XIX – early XX century – a climate scientist A. I. Voyekov, a geographer P. P. Semyonov-Tyan-Shansky, the zoologists I. A. Severtsov and A. F. Middendorf, the botanists S. I. Korjinsky and A. N. Krasnov, the naturalists V. V. Dokuchaev and V. I. Vernadsky – along with the collection and analysis of the facts, spoke for the need for a standardization of the nature's riches gathering, consumption of nature and even the creation of an entire science branch of the environment – social ecology. They had already noted that the vegetative cover along with the soil was the most important productive force of the country and called for a particularly careful treatment.

Indeed, if we look at the history of the population of the Central part of Russia, by the beginning of XX century we will see that almost all the provinces in the region were already densely populated, and those 2-4 tens of land per capita that former serfs received after being released, fed the increased population with a great difficulty. During all previous 150 years, the growth of the population was accompanied by deforestation. And, on the first credentials of the Forest department, in the middle of the XIII century in the Central part the forest-steppe zone was

between 40 and 60 % of the forested area, and by the beginning of XX century it remained only 9–20 %. The area of plowing increased to 50–60 %, which facilitated the strengthening of aridity and a drop in crops (PRSA, F. 2378, Op. 1, D. 13, L. 232).

The expedition activities of I. I. Sprygin for a period of forty years work covered a huge area of forest-steppe. Thus, in 1900, he was a member of the expedition to the Trans-Ural part of an extensive at that time Perm province. In 1912-1914 he was a member of the Chernigov province expedition. Almost every year, and more than once he was a participant and an organizer of expeditions and excursions for the Penza and its neighboring Ryazan, Tambov, Simbirsk, Saratov and Nizhny Novgorod provinces.

In 1926–1927 and in 1937 he studied in particular detail the unique vegetation cover of the Zhigulev Mountains, Buzuluck pine forest and other certain areas in order to find new territories for the creation of nature reserves. In May 1977, the State Reserve of Zhigulevsk was named after I. I. Sprygin. It was then in his summer research tours and expeditions, when he described the vegetation cover of the right bank of the Volga near Khvalynsk, the Bolshoy Yrgiz river valley in Zavolzhye and middle flow of the Ural river from Uralsk till Orsk where he assumed the forest boundary in pre-agricultural time was. As a result of this research a herbarium and the actual botanical and geographical materials of a great importance – a description of probe areas, which preserved a vegetation cover, slightly affected by the human activity, were collected. The greatest interest for the naturalists was the detailed descriptions of the xeropolium areas. For example, only on the territory of the Penza region more than 60 of them were preserved. In the places where the vegetation cover was not altered fundamentally, for example, the virgin steppe was not plowed, I. I. Sprygin's observations on changes that took place in it, which were due to natural changes in the environment, and the activity of the population, were of great importance.

Several years of active research and systematizing of the Penza province ethnographers in the beginning of XX c., the natural scientists, led by I. I. Sprygin as well as the social scientists, headed by V. H. Khokhryakov, showed the fragmentation and obvious insufficiency on one and the redundancy on the other side of the existing factual material, knowledge about the region, its nature and social history. There was an urgent need to replenish it, especially in the natural history section. Provincial and district Zemstvos were very interested in learning and in the use of such materials in their practice. The officials of the provincial "presences" in their quest to show and participate in the "townsfolk successes" on the eve of nationwide festival – The tercentenary of the Romanov dynasty also wanted this. This coincidence of interests had served the greater good – the development of scientific research and the establishment of regional studies in the province.

As a result, in the Penza province, under the orders of the local Zemstvo in 1909–1912 a great study of the nature of the region was conducted. This work repeated the similar studies carried out in the neighboring province of Nizhny Novgorod under the direction of V. V. Dokuchaev in 1882–1886. The results were then published in the 14 volumes of "Materials for the evaluation of land the Nizhny Novgorod region". A methodology developed by him and his associates in fact marked the beginning of the scientific regional studies, or "full statistics" of nature on a certain date. The gathering expedition, which was running in the Penza province under the guidance of a soil scientist N. A. Dimo, suggested the same statistics. A series of essays prepared by scientists for publication, organized materials on geology and topography, soils and their parent rocks, climate and moisture conditions, vegetation, wildlife, integrated observations on the conditions of the wise use of nature resources by the population. Even then, the interests of I. I. Sprygin included not only the province vegetation study, but also the history of the natural world as a whole, a social order of its "claiming" by the man, specifically, how and when "the virgin until then areas of forests and steppes were subjected to processing by the Russian agricultural population" (Proceedings, 1926: 5). By then he already developed and partially tested in practice the methodology of an integrated approach to the study of the productive forces of a separate geographic area. It was the most important task of the scientific environment management, making its first steps.

The First World War and the Civil War were the cause of a failure in plans for the study of natural and historical conditions of the Penza province and publications of their results. The dreams of 14 volumes, summing up the work, collapsed immediately. Subsequently, a certain part of them was published, but many materials of a purely observational, expeditionary nature, due to the "loss of relevance" never got the publication. The events of February and October 1917 were, to a certain extent, a momentum for the development of the scientific regional studies in the

province. The active creative work Penza of regional specialists advanced in the 1920s. – The "golden decade" of the regional studies ([Scientific, 1993: 3](#)).

In 1917 under PNSS an Environmental preservation Committee was formed, in 1919 under its representation the first in Russia steppe reserve "Poperechenskaya steppe" was established by the Penza region Provincial Executive Committee. In 1921, with the active assistance of I. I. Sprygin, the Penza branch of the State Committee for Nature Protection was established. This work led to the creation of reserved areas group on the territory of the province.

In these years, with the participation of I. I. Sprygin, the Penza Natural Sciences society took some other initiatives of the local lore character. One of the main was an integrated approach to the study of the region, covering the whole palette of its component systems: natural landscapes, the present and the active population, agricultural and industrial production, culture and science. The "round table" gathered almost all the regional specialists of Penza – both natural and humanitarian scientists. As a result of this creative union was the transformation the PNSS to the PNSLLS (Penza Natural Science and Local Lore Society).

In 1929, the first National Russian Congress on Environmental Protection was held in Moscow. Three out of its 123 delegates were natives of Penza – I. I. Sprygin, A. A. Uranov and A. A. Medvedev. This congress marked the creative peak of local history activity of the country. I. I. Sprygin was one of the keynote speakers at the congress. The work experience of the Penza Environmental set an example for the similar regional interdepartmental commissions, later formed in republics, areas and regions for guidance of the environmental protection there. I. I. Sprygin was a member of the editorial board of the Congress and prepared methodical guidelines on the matter of the environmental use, in accordance with one of his resolutions ([Proceedings, 1930: 59-60, 220](#)).

By that time I. I. Sprygin was already aware that the facts of natural science were a component of the geographical environment, although they formally were not included in the structure of society, but being the place and condition of life for the society. In their turn, environmental systems were under a constant and multiple consumer impact of the population. The population's goal is the selection and the assignment of the material and the energy components of environmental systems, in other words – the consuming or the use of nature.

I. I. Sprygin was aware that to a human nature is not only the environment, but also an enormous richness of inestimable value, the "interest" from which nature provides as "favors" for the human use. In the production of these "favors" the nature trusts him, working with him side by side. It should by no means be "overtasked", because this threatens with its destruction and at the same time with the death of the destroyer. Considering this I. I. Sprygin wrote: «...In the near future there will come a time when everyone will understand the need to protect the main, the capital, given to us by the grace of nature, on the interest from which we are living» ([Spyrigina, 1982: 113](#)).

A Botanical Garden and Herbarium, a few species of plants, originally discovered by him, (generally steppe plants) were named after I. I. Spyrgin for the great scientific merits. Cartographic materials of I. I. Sprygin formed the basis of many geo-botanical maps, created by the Botanical Institute of the USSR Academy of Sciences. In 1938, I. I. Sprygin was awarded the degree of the Doctor of Biological Sciences without defending a thesis.

5. Conclusion

The interest in local lore history is renewed lately; a substantial body of local lore facts was accumulated and partly summarized in a variety of articles, statistical reports, magazine articles, anthologies, monographs, collections of articles and periodical press publications. However, in spite of the collected material, the integrated, natural-social-historical model of the area and region, as seen by I. I. Sprygin, which would enable the making of a robust long-term strategy of development of its environment and society, does not exist yet.

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