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A Programmed Interview with Dr. Niu Jianlin from the Institute of Population and Labor Economics (the Chinese Academy of Social Sciences), which has been given on the 1st of December, 2011 in the Institute of Population and Labor Economics (CASS, Beijing).

A Programmed Interview with Dr. Li Chunling, Professor of the Department of Sociology of Education, the Institute of Sociology (the Chinese Academy of Social Sciences), which has been given on the 30th of November, 2011, in the Institute of Sociology (CASS, Beijing).

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Boris E. Raykov's activity as a natural science historian in the Institute of History of Natural Science and Technics (1940–1960-s)

This paper presents the overview of activities of the famous historian of science and educator Boris E. Raykov. The motives that led him to the history of science were examined. Attention is paid to his work both in the Institute and before.

Keywords: Boris E. Raykov, Institute for the History of Science and Technology, evolutionary biology before Darwin.

Russian and Soviet universities had no faculties or departments of history of science. Therefore, the path of every scholar in the history of science has been a different story, many of them came to this area already being experienced scientist in the first field of study (biology, physics, mathematics). The community of historians of science in USSR have never been numerous so the fate of each of them deserves a special research.

Boris E. Raykov was a well-known Russian educator, natural science's methodologist and a historian of science. He lived a long life, which was devoted to two fields of activity — pedagogics and history of natural science. The first period of his life was mainly connected to teaching natural sciences in secondary school. He was one of the first educators to use so-called “research approach” in school practice (modeling the scientific process at children's level). Also, he taught natural sciences technique in Neuropsychiatric University and later at A. I. Herzen Pedagogical institute. But unfortunately, during social conversions of 1920-s, his point of view appeared to become contradictory to the dominating doctrine of Commissariat of Public Education for the new school. He was arrested and incarcerated in internment camp, where prisoners were forced to work on building area of the Belomor-Baltic canal. He was released in 1934, but decided to stay in the place of his imprisonment, called Medvezhya Gora. When the Great Patriotic War started, he was evacuated to Arkhangelsk. There he worked in Pedagogical Institute, where he managed to found a faculty of geography and natural sciences. He got a possibility to return to Leningrad only in 1945 and recommence his teaching practice in A. I. Herzen Pedagogic Institute. He also took active part in the Academy of Pedagogic sciences sessions. He made a difficult choice and decided to go to Leningrad, where he hoped to find his colleagues. He refused the Minister of education's offer to work in the Pedagogic sciences' Academy in Moscow (he was nominated to be its member in 1945). He headed the natural sciences department of the Leningrad branch of the Academy of Pedagogical Sciences. But besides teaching at that time historical work began to take an important place in his life. In 1945 he became a researcher in the just founded Institute for the History of Science.

It couldn't be said that Raykov didn't work in history of natural sciences before getting his position in the Institute. His interest in this field continued throughout his long career. The history of teaching natural sciences, when he had just started his activity in high school, soon led him to broader context of those processes. He wrote in his memoirs:

“When I was working with methods of teaching natural sciences, I've been interested in history of natural sciences itself — especially in teaching it. And my investigations took place even before the revolution” (Raykov, 2012).

He was studying the history of teaching natural sciences in schools of medieval Russia (Raykov, 1916), natural history education in XVIII century (Raykov, 1922) and the activity of Russian teachers of natural history in XIX century (Raykov, 1924). Many of these studies were reflected in Raykov's late works. His laborious work made him to realize the history of natural science more widely and broadly. He came to the problem of spreading the evolution theories in Russia¹ in the “pre-Darwin” period of time, through investigating the history of scientific works' refraction and evolution ideas. He started his examination of this problem in 1920-s and continued the work during surviving a quite hard period of his own life — after being released from the camp in Medvezhya Gora. There he was managing a sanitary-bacteriological laboratory (he forced to get new knowledge in microbiology,

¹ Today historians of science today by evolutionary theory actually understand Darwin's theory and all that grew at its base, but during B. Raykov's time — any concept of transformism (inconstancy and mutability of species).

parasitology and chemistry but it was the way to survive during his imprisonment and to get money after). This job was not sufficient for the mind of the scientist. Because of the lack of teaching, he came back to his history investigations with a great enthusiasm. Raykov got an opportunity of occasional visits to Leningrad for working in libraries and archives. He arrived twice a month, for 3 — 4 days and spent this time only for his researches — visiting archives, ordering books from the library and other work, connected to searching information about the problems of developing evolution theories in Russia. At that period Raykov got his most important contacts — the ones, that became a base for his future cooperation in the Institute of History of natural science and technology. Thanks to personal assistance of Vladimir L. Komarov — the president of Academy of Sciences, Raykov could receive books from the funds of Academy of Sciences' library. Though he wasn't a member of this academy he could even take these books with him to Medvezhya Gora and return them back after using unlimitedly. There was no exception for rare books, dated XVIII century, both Russian and foreign. Raykov wrote in his memoirs:

“I came to the library with a suitcase, filled it up with books, which I'd ordered before, and left for Medvezhya Gora the same evening. When I had some time, free from the laboratory, I was studying those books” (Raykov, 2012).

And he also had to work with some books in the Public Library (now Russian National Library), because some of them the Academy Library just didn't possess. So Raykov had to spend there about 12 hours a day. But the hardest task was to work with the state archives. Scholar asked Sergey I. Vavilov (the scientific head of Optical University and the deputy of Leningrad's council) for help. Vavilov wrote an official letter to the archive, on behalf of the council's deputy. Only that way Raykov was allowed to work with the archives. But still he had to give all his notes to the archives' employees for censoring before actually using them. Such were the working conditions for Boris Raykov during the first years of his historical investigation activity. We can't say that this kind of activity was typical, but the whole situation of professional reshaping during imprisonment and the later years, spent outside the scientific society, was quite ordinary. We should also note that Raykov's destiny became a happy exception from the row of broken lives of scientists, which were destroyed during Stalin's repressions. Raykov himself noted that he has been arrested before the mass repressions begun — this saved his life. When the repressions were at their peak, he had been luckily forgotten in Medvezhya Gora. So Raykov considered reasonable not to come back to capital before 1945.

His first serious work, named “Essays on the History of the heliocentric views in Russia”, was published in 1937 (Raykov, 1937). We should note that the fact of appearance of this book itself can be considered a unique one. The book's author wasn't quite well-known in scientific society and has been claimed politically vicious. It was almost impossible to publish a book, also considering cruel repressions and being stuck in Medvezhya Gora. S.E. Vavilov helped Raykov a lot at that time, though they were not even familiar to each other. Vavilov has read Raykov's manuscript and made a conclusion: “The book is remarkable, but the conditions in which you wrote it, are even more remarkable. It has to be published. I'll take care about the redaction myself to make sure, that everything goes the right way.” This book has been published by Academy of science's publishing house, edited by S. I. Vavilov personally. He hasn't been the president of the Academy yet, but already took a big part in publishing house's activity.

But the scientist himself admitted that this work was a kind of a test for him. He wanted to know, what he is capable of in the history of sciences. Raykov planned to write a big summary work, dedicated to Russian pre-Darwin transformists. First volume covered the period

since 1936 to 1941. The materials about that topic were kept in 10 huge folders. But the Great Patriotic War forced him to stop his visits to Leningrad. So he practically didn't have any opportunities to continue his scientific investigations. He could only take a part of his materials to Arkhangelsk. The rest of them were dug in the abandoned garden of his house in Medvezhya Gora. He could only find them when the war was over. Then he processed and systematized these unique files, commented on them and got a new book as a result. It was named "Essays on the history of evolutionary ideas in Russia before Darwin" (Raykov, 1947). In this book, there were scientific biographies of XVIII academics such as Peter Simon Pallas and Kaspar Friedrich Wolf, the forgotten medical philosopher Yakov Kaidanov from XIXc., evolution biologist Afanasiy Kaverznev from the end of XVII c. and completely unknown Mark Tausher, who was an entomologist and a scientific traveler. Raykov commented that this mixed group of scientists had one thing in common: all of them were the first transformists in Russia. They all admitted that live creatures change during evolution and denied that species remain static. This statement, which was at first considered to belong exceptionally to Lamarck and Darwin, has become a huge ideological movement towards the development of biological sciences. This way, in his first biological work, Raykov showed that there were transformists in Russia before Darwin and even before Lamarck, in contrary to the other point of view. This work was written with the old typewriter on yellow sheets of wrapping paper, accompanied by the sounds of bombing. But for Raykov it became a pass ticket to the world of serious historical science. It was declared as a dissertation to the Lenin's Pedagogic Institute for the doctor of pedagogic sciences' degree. On 25th of July, 1944, the Academic council has decided to appropriate a scientific degree "doctor of pedagogical sciences" to Boris E. Raykov. And he didn't even have to defend his dissertation.

In 1945 he was enlisted as a senior researcher in the Institute of natural science history. The Institute's functioning was initiated on 9th of February by the president of the Academy of Science, Vladimir L. Komarov. After his death, the Academy and Institute headed by Sergey I. Vavilov. Thanks to him, Raykov employed there. We should note that in 1938 the Institute, headed by N. Bukharin, was crushed. And the organization of its structure has remained a strong necessity for the scientists. So temporarily, there was a History of Academy of science Commission (KIAN) from Leningrad with president Sergey I. Vavilov.

When Raykov was finally employed in the Institute, he was set to work in Leningrad permanently. It was very important for him, because the Institute itself was situated in Moscow. Raykov had a right to visit the Institute of natural sciences only for a couple of times a month. The rest of his time he has been working at home in Leningrad. His salary has been delivered to him by post. That continued for 8 years (1945–1953), until the branch of the Institute has been opened in Leningrad.

In 1948 Raykov left his professorship in Herzen Pedagogical Institute and the Leningrad branch of Pedagogical Sciences' Academy because of pressure from administrators after the tragically known VASHNIL session. He and his colleagues were accused in weismanism-morganism. The Presidium has sent a request to the sciences' Academy about Raykov's activity. The answer to this request has been written by N. A. Novikov and S. L. Sobolev and it was so positive, that the Raykov hasn't been fired. After that, B. E. Raykov completely concentrated on his historical scientific activity and has left pedagogics.

In 1940–1950-s the history of biology mainly had 2 directions: the history of evolution theory and the history of biology in Russia. In 1957 two volumes of the "History of Natural Sciences in Russia" were prepared for publishing. Raykov took active part in Institute's investigations.

He has been extremely productive. Raykov published 86 articles only during his work in the Leningrad branch of ИИЕТ. It included 14 his own monographs and 15 have been personally redacted by him. It was Raykov, who made a basis of the biological history direction in Leningrad. He worked himself, used his old contacts and created new ones, collecting talented teachers and people, ready to give all their power to the history of science.

The main result of his hard work, which was started back in 30s, has become a fundamental monograph, published in four volumes, named “Russian evolution biologists before Darwin. History of evolution theory in Russia” (Raykov, 1952, 1959). It has contained about 20 essays on Russian scientists’ life and work. Most of these scientists were completely forgotten. Raykov was the first, who traced the evolution of Peter Simon Pallas’ philosophy and processed the most of Kaspar Friedrich Volf’s works, and then he made some important conclusions about this scientist’s biological point of view. Raykov has introduced Kaverznev’s name into the history of natural sciences — he was unknown before. A lot of modern historians admit that Raykov became a founder of Russian “Studies of Baer” — the area of history of biology, dedicated to K. M. Baer’s activity. The first volumes of this work were edited by a very talented and attentive historical scientist, L. S. Sobol’. He spent many years publishing the history of Darwin’s correspondence. A part of these essays were translated into German and published in German Democratic Republic. Also Raykov started to investigate the history of German evolutionists, showing the connection between Russian and German sciences, which defined in many ways the direction of science’s development in both countries (Raykov, 1969). Active contacts with historians of science, such as H. fon Knorre, also were Raykov’s achievements. Raykov has been accused in cosmopolitanism many times because of the attention that he paid to connection between Russian and German biology, and his statements that these connections have made a basis for the development of science in future.

Raykov came to the history of sciences in a very hard period of time and started working on a complicated and ambiguous topic. During the domination of lisenkoism, in 1950, the Darwin theory itself was indissolubly connected to socialistic ideology. So this topic was quite slippery and was usually reduced to searching for some ideas in history that were equal to Lysenko’s ideas, not to objective consideration of the whole development of evolution theories. Another excess of historical works at that time, was the aspiration of proving the leadership of Russian scientists in evolution outlook, comparing to western scientists. B. E. Raykov also couldn’t escape the latest tendency, offering quite doubtful conclusions, made on the basis of unconcerned or incomplete translations of scientific works. Nevertheless, the volume of documents, introduced by Raykov to scientific circulation can hardly be even estimated. And these documents are still being used, with some correctives of course.

At first, Raykov was working in Leningrad alone. Only in 1951 Udif H. Kopelevich and Tatiana A. Lukina joined him. Ivan I. Kanaev and Ksenia V. Ryazanskaya (Manoilenko after marriage) came to that department. When the quantity of employees grew bigger, Raykov showed himself as a wonderful organizer. He was making investigation plans, offering different topics, which could’ve been called “projects” in the modern world. He insisted on a precisely planned investigation of the Sciences Academy’s archive, which has contained many scientists’ funds. Raykov noticed that in spite of active file processing, there were a lot of materials about A. F. Sevastianov, F. F. Brandt, A. F. Middendorf, A. Langsdorf, M. A. Maksimovich, F. I. Ruprecht which have been left unused. He tried to involve into his activity some professors from the University of Saint-Petersburg, such as his teachers: V. M. Shinkevich, V. T. Shevyakov and others. Finally, he offered to pay attention to the works of scientists,

which have been working in the Military-Medical Academy: E. Brandt and N. A. Kholodkovsky. Nowadays each of these topics is still being developed; they are still actual and keep attracting scientists' attention. This way Raykov really did make a basis of scientific school in history of biology in Leningrad.

B. E. Raykov took active part in publishing a series of collections, named "The History of biological sciences" in structure of "Institute of History of natural science and technics' works AN USSR". He has edited some of these collections, published in Leningrad. But in the early 1960s, this publishing was stopped. Only thanks to Raykov, it was restarted by Leningrad branch after 5 years break. He signed the advanced copy of first release on 25th of June in 1966, just a month before his death.

B. E. Raykov showed himself as a very gifted teacher, giving knowledge to a whole group of talented historians of science. The problem of preparation of future natural sciences' historians has always worried him a lot. At that time, there were no special faculties or departments in any higher education institution. That's why Raykov suggested to teach such specialists in his institute. He recommended giving young employees small topics for investigation, which were available and could've become first steps to professionalism and real creativity. Raykov was fastidious both to himself and his pupils. He demanded laborious work with the source every day, searching for new documents, unknown or unused before, attention to new problems and careful work on every topic. Many scientists were writing their works under his direction: K. V. Ryazanskaya (Manoilenko), T. A. Lukina, N. N. Banina. Some of the books that he has been editing, were published after his death: "Carl Bar's correspondence about geographic problems", compounded by T. A. Lukina (1970), "Reflections over the freaks' theory" by K. F. Volf, prepared by U. E. Kopelevich and T. A. Lukina (1973).

Professor Raykov's 70-th anniversary was celebrated in 1950. The scientist council's meeting, that took place on 16th of November, has been dedicated to him. Many famous scientists made a report on this meeting. And finishing my own report, I'd like to introduce you some citations about our hero's activity:

"Raykov is celebrated as one of the founders of Russian science's history. He is said to be a history of biology himself" (H. C. Hoshtoyants).

"There is no doubt, that the new maintenance that you systematically bring to the pages of sciences' history, completely changes our old concepts about the development of biological sciences in Russia" (I. A. Polyakov).

The breath of his interests and research was enormous and his published work prodigious. There are more than 650 publications, from scientific and popular books and articles to book forewords and a lot of reviews. We can conclude that Raykov's achievements in science and organizations of this area of knowledge are doubtless, though many of his works are overestimated and criticized.

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Pharmaceutical hunger and medicinal plants: Mobilization of the botanists during World War I

In my paper I will describe the involvement of Russian botanists in the collection and cultivation of medicinal plants as part of the war effort. In the autumn of 1914, when cut off from foreign suppliers, Russia was quickly faced with the situation of “pharmaceutical hunger”. In 1915–1917, with advice or/and leadership of botanists, special meetings were organized, botanical trips were made, manuals and reference books were published, experimental stations and fields were created, lectures were read and so on. As a result of all these actions taken by the governmental and public organizations, high prices and steady demand were established. It made an enabling environment for the cultivation and collection of officinal plants. The structures created during WWI not only survived the war and revolutionary years but developed into large institutions. Many of those botanists who began to study medicinal plants during WWI successfully continued their work in the Soviet times.

Keywords: medicinal plants, Russian botanists, Pharmaceutical industry, Word War I.

Botany would seem to be an absolutely peaceful occupation. However, the World Wars in the 20th century disrupted normal life for the entire Old World and spared no one. Russian botanists worked in support of the military industry during the First World War on two important projects: the extraction of tannins from tree bark (mainly in the production of jackboots) and medicinal plants. I will emphasize the role of medicinal plants because the most active team of scientists in this area conducted their research in the Baltic region. Whereas most studies on tannins were concentrated in Crimea and the Caucasus, medicinal plants were studied in the whole territory of European Russia and the most active groups worked in St. Petersburg and Dorpat (Yuriev, now Tartu) University.