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Contribution of the Scientific Expeditions Operating in Pamir and Adjacent Regions to the Development of the Geological Field in the 20-30s of the 20th Century

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ABSTRACT

This article examines the activities of the expeditions organized by the Academy of Sciences of the USSR for the comprehensive scientific research of the Pamir region in the 20s and 30s of the 20th century. On the basis of the expedition's research work, the issues of development of industry and geology in the republic have been highlighted.

At the beginning of the 20-30s of the 20th century, the underground resources of Tajikistan were not well studied scientifically, there was only incomplete information about them from the reports of local residents and descriptions of travelers. The mineral deposits of this area were not given serious economic importance. At that time, due to the lack of technical and economic preparation, hydropower resources were not used.

In August 1931, the development of industry in the republic was analyzed and the low level of research of industrial natural resources in Tajikistan (geological exploration, lack of prospecting and the lack of accurate scientific data on the location and number of minerals), the energy base of existing and newly built enterprises was studied to create an energy base. it was noted that resources (coal, mountain rivers) are not being used effectively and they are not developing due to their slow research. In addition, it is noted that the construction materials industry is not developed in the republic, which caused great difficulties in the implementation of the construction plan.

In the first five years of economic development (1928–1933), Tajikistan experienced a shortage of scientific personnel in industry, agriculture, cultural construction and other fields. They did not have time to develop important scientific and technical issues put forward by the national economy of the republic. The material and technical base of the republic was also in a weak condition. Therefore, in the late 1920s and until the 1930s, the main researches on the study of productive forces in the republic were carried out by large expeditions organized by the central institutions of the country.

In 1928-1931, the expeditions to the Pamirs carried out effective work in studying the geology, geomorphology, stratigraphy, tectonics and age of the eruptive rocks of the region. This led to the initiative of the Academy of Sciences of the USSR to organize large geological expeditions to the

Pamirs with the participation of the country's leading geologists. In the second five-year period of economic development (1933-1937) in order to effectively use the republic's natural resources, the main task of the expedition was to study the production forces of the Tajikistan SSR. The Tajikistan-Pamir expeditions of 1933-1937 were also tasked with comprehensive research of various natural and climatic regions of the republic.

In 1933, all the forces of the expeditions organized to the Pamirs were focused on solving heavy industrial tasks. The results of the research carried out in 1932 made it possible to identify a number of geographical regions in Tajikistan, distinguished by their important minerals and energy sources: 1) Northern Tajikistan, 2) Zaravshan district, 3) Stalinabad district, 4) Darvaz and 5) Pamir.

As a result of researches related to the expedition carried out by the Academy of Sciences of the USSR in the republic, the main agreement signed between the People's Commissariat of Heavy Industry and the Academy of Sciences of the USSR on May 7, 1933 defined the prospects for the development of the industry. In accordance with this agreement, the academy undertook the organization of comprehensive research work in various regions of the country, including in Kyrgyzstan and Tajikistan.

The first conference dedicated to the results of the expedition to study the production forces of the Tajik SSR, held in Leningrad in April 1933, determined the need to develop the mining industry and the fuel and energy sectors, and establish the production of building materials based on local raw materials.

After the first conference on the study of the productive forces of the republic, the Tajikistan-Pamir expeditions undertook the following tasks. In the interests of "socialist construction", the study of the natural resources of Tajikistan and the completion of expeditions, that is, the complete implementation of research up to the discovery of chemical elements for each important industrial object and the determination of ways to use it in production. Expeditions, where necessary, carried out in-depth reconnaissance to prove the industrial value of a point, carried out mining and technological research for experience. These works gave detailed ideas about the occurrence and typical structure of some deposits and provided high scientific results.

In 1933, N.V., who worked as part of the Tajikistan complex expedition. Ionov's group identified pegmatite deposits containing tin in the Sokh and Isfara river valleys. As a result of the conducted research, several tin deposits were noted, and Tamingen, Karasuv, Aksuv, Isfara were considered to be somewhat promising mines. The tin pegmatite deposits extending 50 km away with discontinuities confirmed the existence of a tin industry area between the Turkestan-Aloy range. The political and economic importance of the discovered mines was enormous. Until that time, the only place for tin mining in the Union was considered to be the regions beyond Baikol, and most of the tin used in the USSR was brought over the border for foreign exchange. Search for tin ores was carried out on the direct order of Sergo Ordozhonikidze, People's Commissar of Heavy Industry of the USSR.

Summarizing the research work carried out by the Academy of Sciences of the USSR in Tajikistan during 1933-1934, the leaders of the complex expedition to Tajikistan N.P. Gorbunov and M.K. Rastsvetaevs stated at the plenary session of the Council for the Study of Production Forces: "The biggest achievement of the expedition of economic importance was the discovery of tin pegmatite deposits on the border of Tajikistan and Kyrgyzstan. These deposits were further explored in further studies of industrial exploration. In this way, a new territory of the USSR, rich in the element of tin, was identified.

In 1934, studies of tin mining in Tajikistan, Kyrgyzstan and other regions of Central Asia revealed a natural phenomenon that represents the significant presence of tin in volcanic products erupted from the earth's depths. On the basis of these observations, it was necessary to reconsider the question of some types of granite massifs in the regions rich in tin in all regions of the Soviet Union.

An expedition organized in 1935 carried out research work in known tin mines in the republic and opened new tin mines. The 6th detachment under the leadership of Maksimov carried out

reconnaissance work in the Takfon tin mine, which was undoubtedly described as a tin-arsenic mine serving industrial interests. 200 tons of tin ores were mined during exploration. The proximity of the mine to the new Stalinabad-Oratepa highway (2 km) greatly contributed to its industrial development.

Exploration of tin deposits, like other minerals, was carried out in Tajikistan at the same time as their industrial exploitation. In 1933, mining began in Takeli and Konsoy tin mines, and in 1934, tin was mined from the areas near Isfara.

In the first years of economic development, the mining of rare elements and some polymetallic ore deposits began in the Karamozor ore regions (Konsoy, Southern Darvoz, Takeli, etc.). Shymkent metallurgical plant became the main consumer of Karamozor polymetallic ores.

In April 1933, the Karamozor Mining and Ore Combine was put into operation as a result of exploration and reconnaissance work carried out in 1928-1933. Solutions for experiments were taken from lead ores at this combine. This created the need to develop the technology for mining polymetallic ores and rare metal reserves. In 1933, Karamozor was in the stage of rapid and rational development.

In 1933, as part of the Tajikistan-Pamir expedition, S.F. The Northern Geological Department, under the leadership of Sosedko, continued the exploration of Karamozor and identified more than 50 mineral deposits in this area. Among them, there were minerals such as gold, lead, copper, margumush, manganese, mercury, tin stone, iron, beryl, corundum, najdak, bitter stone, graphite, soapstone, turquoise, asbestos.

The ore-rich region of Karamozor has given good results in the use of mineral deposits. Since 1933, zinc and other non-ferrous metal mines have been mined in this area. The Konsoy mine, which is a component of the large Karamozor enterprise, was put into operation in 1933. In the same year, 3 thousand tons of ore were mined. By 1934, the volume of fossils reached 18,000 tons. In 1933-1934, capital funds spent on the construction of the mine amounted to 3.7 million. amounted to rubles. Industrial, residential and cultural-household construction works have been booming in the mine. A mining workshop was established and capital construction works were carried out at the mine. The funds allocated for the capital construction of the Konsoy Mining Department for 1935 were mainly directed to urgent works such as the construction of a power station, water supply, disposal of the mineral enrichment enterprise.

In 1933-1937, the mining and ore industry in the republic developed rapidly. In two years - 1934 and 1935, mining of lead ore almost tripled. In 1937, a mineral enrichment plant was put into operation at the Konsoy mine, and lead mining increased significantly. The work at Takeli mine also developed rapidly. In 1933-1937, exploitation of non-ferrous metal deposits became one of the important areas of industrial specialization of Tajikistan.

Tajikistan-Pamir expeditions carried out fundamental and practical work together. After the completion of exploration, the available mines were put into operation immediately. For example, Nurota scheelite mine, Varzob feldspar mine, Isfara tin mine and Pamir gold mine. In Takfon tin-margumush mine, Marguzor antimony, Archamaydon margumush, and salt mines, work was carried out in the same way.

Summarizing the results of the geological research work of the northern group of the USSR FA Tajikistan-Pamir expedition, one of the leaders of the expedition D.I. Sherbakov states: “It can be said without hesitation that Northern Tajikistan has great natural resources to turn existing opportunities into real wealth. To achieve the goal, it is necessary to work patiently, which requires a combination of scientific thought, technical knowledge and economic experience. Special importance was given to the opening of deposits containing rare metals. D.I. Sherbakov predicts that Central Asia can take one of the leading places in the USSR in the extraction of rare elements.

Expeditions carried out hydropower cadastral work for Tajikistan for the first time. Tajikistan's

potential hydropower resources are 25.5 mln. kw., and took the second place among the republics of the Union (207.3 million kw. after RSFSR). The water power of Tajikistan is 9.3% of all water reserves of the USSR. Tajikistan ranks first among Central Asian republics in terms of hydropower resources. Tajikistan owns 43 percent of the total water resources of Central Asia (about 60 million cubic meters). According to the volume of potential hydropower resources per 1 km2 area, Tajikistan took the first place among the republics of the Union. The relative capacity of Tajikistan's water power was determined to be 177.8 kW/km2 per km2, compared to 23.0 kW/km2 for the USSR. The exact discovered hydropower resources of Tajikistan are 7744.4 thousand kw. constituted the specified capacity.

Expeditions contributed to the development of many sectors of the national economy of the republic, primarily fuel and energy and mining industry.

The total production of industrial products of Tajikistan SSR in 1932 was 51 mln. to rubles, 187 million in 1937. up to rubles or increased by 3.7 times. Preparations for the industrialization of the Shurob coal mine were carried out, oil production increased by 50 percent. Varzob hydrostation was built in Stalinabad district. The mining volume of polymetallic ores in the mine has increased several times. Cotton ginning factories and a leather factory were built in Melnikovo and Rega.

The letter of the Council of People's Commissars of the Tajikistan SSR to the People's Commissariat of Heavy Industry of the USSR and the State Planning Committee of the USSR on the construction of the large Takob fluoride-lead enterprise on September 27, 1937 states the following: It is intended to establish an enterprise for extraction and enrichment. It was necessary to use feldspar in the aluminum industry. The high-quality nature of the ores, the availability of large reserves and convenient location made this enterprise one of the first places in the Soviet Union. In 1935, the organization "Takobrudstroy" (Takobrudstroy) was established for the construction of the enterprise within the framework of the General Directorate of Mining and Processing of Non-ferrous Metals of the People's Commissariat of Heavy Industry. 3,550,000 rubles were allocated for preparatory work for the construction of Takob ore and simultaneous exploration. 2700 thousand rubles were spent in two years.

The high level of exploration, extraction and use of minerals was reflected in the third five-year plan of the national economy development plan of Tajikistan USSR approved by the Council of the People's Commissariat on February 1, 1939. The section on the development of heavy industry provided for the following:

a) Further development and appropriation of Konsoy, Takeli, Shorob enterprises, which are conducting their activities.

b) Mastering and development of Adrasman, Takobrud construction enterprises, cement plant, which were put into operation in 1939-1940.

c) To carry out further exploration and construction works in the Altintopkan, Masarif and Kshtut-Zauran coal mines.

d) Placement of mines in Tashkoton and Kushton coal mines.

e) Oil exploration (Shoombor, Qiziltumshuq) and development of "Nefteabad" and "KIM" oil fields.

As a result of the development of industrialization in the USSR and the sharp increase in the country's need for metal, the Karamozor ore region became a clearly targeted research object. Its polymetallic deposits have gained all-Union importance. The non-ferrous metal mines mined in the republic made a great contribution to the development of the non-ferrous metallurgical industry in the country.

Expeditionary work contributed to the development of the republic's production forces and the rapid exploitation of resources. Construction and reconstruction of mines was carried out, oil industry

enterprises developed, mining industry began to produce its products, construction materials production enterprises were put into operation. Mining of rare and non-ferrous metals has increased significantly. The identified potential reserves of hydropower allowed the construction of large power plants in the fifties and later years of the 20th century.

A number of mineral deposits, especially non-ferrous and rare metals, discovered and explored by the Tajik complex and the Tajikistan-Pamir expeditions began to be used during the Second World War. In 1944, the first scientific conference of the Tajik branch of the FA of the USSR, held in Stalinabad, highly praised the scientific achievements of scientists working in Tajikistan.

The activity of the expeditions was distinguished by its high efficiency. Or because the areas they are researching are being studied for the first time, they have gained great importance. On the basis of geological, geochemical reconnaissance and prospecting carried out by the Tajikistan complex and Tajikistan-Pamir expeditions, the legality of the distribution of minerals in different geographical regions of Tajikistan was determined. Five promising specialized areas for industrial development have been identified. Northern Tajikistan, Zarafshan, Stalinabad district, Darvaz and Pamir became the first scientifically based industrial regions of the republic.

About 50 mineral deposits have been found as a result of exploration in Pamir. A conclusion was given about the metamorphic thickness of the gold-rich layers of Northern Pamir.

The expeditions carried out the first hydropower cadastre for Tajikistan and made it possible to identify the hidden hydropower resources of the republic. Based on the study of the hydrology of Vahsh, Zarafshan, Varzob, Gunt and others, a scheme for their development was drawn up for the first time.

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