

The State of Geological Sciences in the USSR by the Mid-Twentieth Century

Ivan Petrovich VTOROV 伊万·彼得罗维奇·弗托罗夫*

(Department for the History of Geology, Geological Institute, Russian Academy of Sciences, Moscow 119017, Russia)

Review of Irena Malakhova, ed., Ivan Vtorov, Natalya Braynchaninova, Irena Malakhova, Olga Martirosyan, and Elena Senkova, compiled and commented. 2022. *The Report of the Session of the Scientific Council of the Institute of Geological Sciences of the USSR Academy of Sciences* (Moscow. November 15–22 and December 7, 1948). Full transcript of reports and discussions [in Russian: *О состоянии и задачах научной работы Института геологических наук АН СССР: Стенограмма сессии расширенного Учёного Совета ИГН АН СССР (Москва, 15–22 ноября, 7 декабря 1948 г.)*]. Moscow: GEOS. 512 pp. (Essays on the History of Geological Knowledge, 33 vols.). <https://doi.org/10.54896/01327496202233>; <http://www.ginras.ru/library/pdf/1948IGN.pdf>.

Abstract: The November 1948 open session of the Institute of Geological Sciences AS USSR was previously unknown, in contrast to the August 1948 session of VASKhNIL. The publication of the transcript of the session of geologists is based on the original verified transcript from the Geological Institute and the Archive RAS. It presented reports on the main scientific directions of geology: stratigraphy, the Quaternary geology, lithology, geotectonics, petrography and petrology, mineralogy and geochemistry, and the geology of ore and coal deposits. This thick book details all the Q&A sessions, discussions of theories, methods, and practice among the leading Soviet geoscientists. The session and its resolution describe the situation and development of geology in the USSR in the mid-twentieth century as well as the collateral impact of the Lysenko affair on the earth sciences in the USSR.

Keywords: history of geology, geological sciences, book review, 1948 session VASKhNIL, 1948 session of the Institute of Geological Sciences AS USSR

摘 要: 1948 年 11 月, 苏联科学院地质科学研究所举行了公开会议, 这次会议鲜为人知, 与 1948 年 8 月的全苏列宁农业科学院会议形成了鲜明对比。此次会

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* Research interests: History of geology, history of soil sciences, and history of the Russian Academy of Sciences. Email: vip@ginras.ru

议的记录主要依据地质研究所和俄罗斯科学院档案馆经过核实的原始记录整理而成。会议报告涵盖了地质学的主要研究方向,包括地层学、第四纪地质学、岩性学、大地构造学、岩相学与岩石学、矿物学与地球化学、矿床地质学与煤床地质学。这份厚重的会议记录详细记载了问答环节的全部内容,包括苏联杰出地质学家们对理论、方法与实践的探讨。此次会议及其决议描述了 20 世纪中叶苏联地质学的现状与发展,并探讨了李森科事件对苏联地球科学的影响。

关键词: 地质学史, 地质科学, 书评, 1948 年全苏列宁农业科学院会议, 1948 年苏联科学院地质科学研究所会议

Seventy-five years ago, a significant event in the history of science occurred in Moscow—the 1948 August session of the All-Union Academy Agricultural Sciences Named after V. I. Lenin (VASKhNIL). This meeting, organized by Trofim Lysenko (1898–1976), had a profound negative impact on biological sciences in the Union of Soviet Socialist Republics (USSR) (Borinskaya, Ermolaev, and Kolchinsky 2019). It resulted in the ideologization of science, the suppression of modern genetics, with detrimental consequences for biological sciences until the 1960s. Despite the fact that seventy-five years have passed since this event, the phenomenon of the so-called Lysenko affair (Joravsky 1986) has not yet been sufficiently studied in the non-biological sciences. While these events have been extensively studied by historians of biology, their influence on the geological sciences has been overlooked. That is why the initial primary documents on this topic are especially important for the history of science. The extraordinary scientific meetings in the USSR in 1948 reflected the beginning of the Cold War and divisions not only in politics but in science, based on ideology. The Lysenko affair had the largest impact on science in the USSR in the twentieth century; it was a classic example of how politics can corrupt and undermine the rational basis of science (Roll-Hansen 2005).

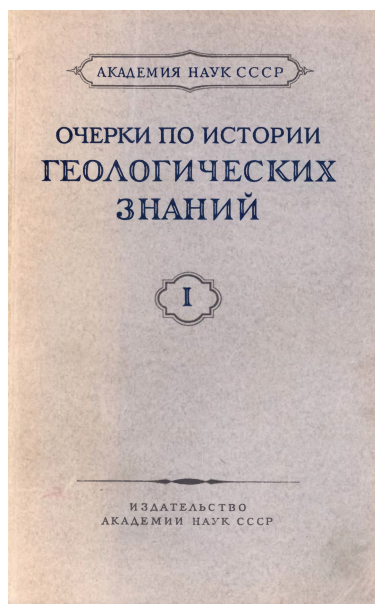
Right after the August session of the VASKhNIL (July 31–August 7, 1948), the Academy of Sciences of the USSR (AS USSR) stated:

The Presidium of the Academy of Sciences of the USSR is forcing the Department of Biological Sciences, biologists, and all natural scientists working in the Academy of Sciences of the USSR to radically restructure their work, to take a leading place in the fight against idealistic, reactionary teachings in science, against adulation and servility before foreign pseudoscience. (Resolution 1948, 23)

In consequence, soviet geoscientists had to organize a meeting to discuss the main issues of theory, methodology, and organization of research and their implementation in the economy. Geologists, palaeogeographers, mining engineers, and even philosophers from various institutes and Soviet cities were invited to Moscow. The joint meeting took place in the Institute of Geological Sciences. This institution was established in Leningrad in 1930 as the Geological Institute AS USSR, based on the

Geological Museum of the AS USSR. After the academy moved to Moscow in 1934, the institute held the 17th Session of the International Geological Congress (Moscow, 1937). Soon several institutes merged into the unified Institute of Geological Sciences AS USSR. It became the most important center of geological thought in the country, where specialists in stratigraphy, Quaternary geology, tectonics, lithology, petrography, mineralogy, geochemistry, and geology of ore and coal deposits gathered.

We have managed to publish a comprehensive transcript of the joint November 1948 session of Soviet geologists based on our copy and that of the RAS Archive (2057 typewritten pages in total, certified by the authors in 1948–1949). This historical source of the geological sciences may serve to stimulate further research in the history of science connected to the Lysenko affair period. The documented reports and stenograms (shorthand notes) provide important new information and guidance for relevant researchers. The book is published in the series *Essays on the History of Geological Knowledge*, which began in 1953 at the Institute of Geological Sciences AS USSR. It was one of the first Russian published series in the history of geology, and this meeting contributed to its emergence. It is also now available online (*Essays* 1953–2022).



Essays on the History of Geological Knowledge (Vol. 1) (<http://www.ginras.ru/library/papers.php?m=his&p=0&l=30000>).

From the book we can see that the daily meetings of the geologists were mostly chaired by the institute director, Academician Iosif Fedorovich Grigoriev (1890–1949). At the outset, he introduces the generalized results of work on the main geological sciences and outlines problems and tasks. He notes the importance of developing new theories, instead of just borrowing from abroad, and testing them in practice. He also

indicates that members of the Academy of Sciences should be more involved in the work of the institute to share its experience.

Among the main speakers were heads of the departments and leaders of scientific fields in the USSR. In chronological order, from November 15 to 22, 1948, the following scientists made presentations:

Name	Lifespan	Field(s)	Name	Lifespan	Field(s)
Menner, Vladimir Vasilyevich	1905–1989	stratigraphy and biostratigraphy	Korzhinsky, Dmitry Sergeevich	1899–1985	
Gromov, Valerian Innokentievich	1896–1978	Quaternary geology	Shcherbakov, Dmitry Ivanovich	1893–1966	mineralogy and geochemistry
Shatsky, Nikolai Sergeevich	1895–1960	geotectonics	Betekhtin, Anatoly Georgevich	1897–1962	
Zavaritsky, Alexander Nikolaevich	1884–1952	petrography and volcanology	Barsanov, Georgy Pavlovich	1907–1991	mineralogy
Belyankin, Dmitry Stepanovich	1876–1953		Grigoriev, Joseph Fedorovich		
Soustov, Nikolai Ivanovich	1903–1950	petrology and petrography	Bilibin, Yuri Alexandrovich	1901–1952	
Pustovalov, Leonid Vasilyevich	1902–1970		Sokolov, Gleb Alexandrovich	1902–1978	
Strakhov, Nikolai Mikhailovich	1900–1978	development and controversy on lithological theory	Wolfson, Faitel Iosifovich	1907–1989	study of ore deposits
Saukov, Alexander Alexandrovich	1902–1964	geochemistry	Gorsky, Ivan Ivanovich	1893–1975	geology of coal deposits

These fields were also the main topics of the sections of the seven days of sessions and almost two days of final discussions. In total, 114 scientists from various cities and institutions presented and engaged in debates. Around a thousand attendees listened to the speeches in the halls and through loudspeakers at the institute.

In biostratigraphy and paleontology, the ideas of neo-Lamarckism (Lysenko's "Michurin biology") were supported. Most foreign scientists and theories were criticized. Attacks on local geologists were much less radical than those on biologists and soil scientists after the August session. The main targets of criticism were theories of scientists who did not attend the meeting, for example Lev Berg's nomogenesis ideas. The ideological guidelines of that time were presented in some speeches, but were less ideologized compared to the recent biologists' session. Geologists did not offer such miracles for the national economy as Lysenko's did for agriculture! The main geological proposals were in regard to the testing of theories in practice and the integration of science with geological exploration and mining.

The most heated discussions were around geological and geographical approaches to the study of the Quaternary period, in particular between Valerian Gromov and

Innokenty Gerasimov. In addition, theoretical directions in the study of tectonics were discussed between Nikolay Shatsky and Vladimir Belousov, while the ideas of Mikhail Tetyaev and especially Hans Stille were much criticized. It was finally decided to pay more attention to geophysics and seismology, especially after the recent catastrophic earthquake in Ashgabat. Frequent government reforms in geological education and scientific institutions were reviewed, as were the relationship between petrography and petrology and tasks in the study in magmatic, sedimentary, and experimental areas. A dispute over lithology began between Pustovalov and Strakhov and their followers surrounding the so-called genetic and comparative methods of studying sedimentary rocks. It was also noted that it was time to divide mineralogy and geochemistry in separate specialized fields. The importance of integrated research and interaction with related sciences was also discussed. In addition, a couple of letters with written questions and comments from Konstantin Markov and Vladimir Obruchev, who were unable to come to the session, were read out. Unfortunately, we can judge their content only through the subsequent discussion, since the letters were not included in the transcript.

Concerning mineral resources, the geology of ore and coal deposits was considered in detail. The main topic was the theory and structure of ore deposits, as well as the development of the metallogeny surveying, mapping, and associated studies. Issues on the geology of oil and gas were considered separately a month later at the Oil Institute in Leningrad, where theories on the origin of oil that contradicted the ideas of Ivan Gubkin (1871–1939) were rejected. We hope in due course to get access to this transcript from the Archive of the Petroleum Research Geological Prospecting Institute (VNIGRI) in St. Petersburg.

The lively and broad debates and the answers to many questions revealed in the book are an important source reflecting the development of geosciences at that time. Issues of scientific publishing and the creation of specialized journals were also touched upon, including difficulties with the publication of articles on the history of science. The session further reveals the origins of theoretical disputes on stratigraphy, tectonics, lithology, and other issues that started in the 1950s of the USSR.

The December 7, 1948 resolution of the session and the robust discussions around it are also included in the book, highlighting insufficient communication between some departments in the development of main theoretical and practical problems in geology and mining. Plans were outlined to improve and update geological research methods and reorganize the structure of the institute. In addition, the lack of work on the history of geological sciences was frequently discussed, prompting the creation of a Department for the History of Geology at the institute the following year, organized by Vladimir Tikhomirov (1915–1994). The meeting's final resolution also included a program for the development of specific geological sciences, covering organizational, methodological, and practical aspects.

When compared to the slim book of the biologists' meeting ("On the Situation in Biological Science" 1948), 200,000 copies of which were published just two weeks after the

VASKhNIL session, the transcript of the geologists' meeting is distinguished by the large volume of reports included, and the scientific nature and openness of the questions, responses, and discussions. However, the materials of the session at the Institute of Geological Sciences have until now remained largely forgotten and rarely referenced because eight of prominent scientists involved later faced Stalinist repression in the Krasnoyarsk Case of Geologists (1949–1950), during which they were accused of incorrect assessment, the concealment of mineral deposits, and sabotage during the search for uranium deposits.

Yet, the geological session was more representative, scientific, and less politicized than the biological one. It served as a significant gathering of prominent geologists in the post-war era, encompassing a comprehensive review of the scientific work conducted at soviet geological institutions across the USSR. The reports and transcripts of the participation in discussions by I. F. Grigoriev, V. I. Luchitsky, V. A. Selsky, N. I. Soustov, A. V. Kazakov, and A. N. Mazarovich became the last documented reports in their lives.

The transcript was published as a large book, now available in PDF format online (at <http://www.ginras.ru/library/pdf/1948IGN.pdf>), with over 500 comments and source references, along with supplementary information on 64 scientific organizations and the biographies of 555 scientists. Dozens of original portraits of speakers were also included. The verbatim, vivid speeches in the book present a captivating glimpse into the state of geosciences in the USSR in 1948, and the book serves as an invaluable reference work for historians of the geological sciences of the period.

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