

IN THE VANGUARD OF SOVIET SCIENCE

This year the Academy of Sciences of the USSR is 250 years old.

It was on February 8, 1724 that Czar Peter I signed the decree establishing the Russian Imperial Academy of Sciences in St. Petersburg.

The founding of the Academy of Sciences responded to the urgent economic, political, and cultural needs of Russia at that time.

Already in the Eighteenth Century geographic, scientific, and ethnographic studies of the country had become the most important direction in the Academy's activities. During the Eighteenth Century the Academy of Sciences organized a series of extensive scientific expeditions, including the Great Siberian Expedition (1745-1766) which was led by the famous explorer of Kamchatka, S. P. Krasheninnikov. The expeditions were an inestimable contribution to the study of the geography and resources of our immense land. "These Russian expeditions," wrote the outstanding French naturalist Georges Cuvier, "were of greater benefit to the natural sciences than the English and French expeditions."

Owing to the outstanding naturalists and scientists who worked at the Academy in the Eighteenth Century, the Academy of Sciences in St. Petersburg quickly became one of the greatest scientific centers in Europe.

The preeminent achievements of the members of the Academy and primarily those of M. V. Lomonosov became part of the treasure house of world science and the spiritual culture of mankind. The activities at the Academy of Sciences of the brilliant Russian scholar and encyclopedist, M. V. Lomonosov, has left a profound impact on science, education, social and political thought, belles lettres, and the fine arts.

M. V. Lomonosov stated the problems of thermal physics with exceptional clarity, thoroughness, and rigor.

Strictly applying his atomistic views of the structure of matter, he came upon the discovery of one of the most important laws of nature, the law of the conservation of matter and energy. The impetus to this brilliant discovery was M. V. Lomonosov's work "Treatise on the Cause of Heat and Cold," which he read at two sessions of the conference of the St. Petersburg Academy of Sciences in 1745. Criticizing in this work the proponents of the theory of "calorific material" which predominated at that time, M. V. Lomonosov for the first time stated his remarkable materialistic views on the nature of heat.

While acknowledging the achievements of Sadi Carnot and Clapeyron, Robert Mayer and Joule, Thomson and Clausius, and other foreign scientists in the further development of the brilliant ideas of Lomonosov, it is with well-grounded pride that we utter the name of this great son of the Russian people, Mikhail Vasil'evich Lomonosov, the author of ideas and theories which make up the main body of contemporary physics of heat.

A contemporary of M. V. Lomonosov, I. I. Polzunov was an outstanding Russian heat technician and one of the inventors of the heat engine and constructor of the first steam engine in Russia.

The remarkable discoveries which were made by Russian scientists and inventors confirmed the predictions of the great Lomonosov that "the Russian soil can bring to birth our own Platos and clever minds with the reasoning power of Newton." Nevertheless, the abundance of talent did not transform the science of Prerevolutionary Russia to its present powerful state, as it might have been able to become. It was only after the Great October Socialist Revolution had become such an historical dividing line that a second life for the Academy of Sciences and all Soviet science began. V. I. Lenin regarded the activities of the Academy of Sciences of the USSR with exceptional attention. Lenin's thesis that communism could not be built

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without new scientific discoveries was adopted by Soviet scientists. Lenin's instructions about strengthening the interrelations between science and the national economy determined the overall direction of the activities of Soviet scientists and their headquarters, the Academy of Sciences of the USSR.

The principal task of the Academy of Sciences of the USSR is to find solutions to the main wide-scale problems which will contribute to realizing the concrete tasks of communist construction.

Science, which grows out of the needs of practical work and justifies its existence by useful results for the benefit of this practice, has at the same time its own "logic" of development.

The foundation for the research activities of the Academy in all areas of modern natural science, technology, and the social sciences and humanities is the philosophy of dialectical and historical materialism. In essence this philosophy is a system which constantly develops and becomes concretized according to the extent of development of our knowledge, control of nature, and historical development.

By carrying out Lenin's national policies in accordance with the growth of teams of scientific specialists, there began to arise and develop new scientific centers in the Soviet republics, the republic academies of sciences. The initiator of this extension of "the geography" of our science was the Academy of Sciences of the USSR. On January 1, 1929, the Belorussian Academy of Sciences was founded, which has now become an important scientific center in our country.

The importance of science has grown to such an extent in recent years that there is no doubt that the Academy of Sciences of the USSR, together with other scientific organizations of the Soviet Union, with higher educational institutions, and the branch institutes, will completely manage to solve the scientific problems specified in the resolutions of the Twenty-Fourth Congress of the Communist Party of the Soviet Union.