THE 22nd CONGRESS OF THE CPSU AND THE TASKS OF SCIENCE

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Abstract

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The recently concluded 22nd Congress of the Communist Party of the Soviet Union "marks a most important stage in the life of our party and country, in the struggle for the triumph of communism" (N. S. Khrushchev). In the depth, scale, and purposefulness of the questions resolved, the Congress has truly worldwide historical significance. The Party Program adopted by the Congress marks the country' s entry into the epoch of building communist society.

The Program of the CPSU is an outstanding document of creative Marxism-Leninism, summing up the accumulated rich experience of communist construction. It is a model of scientific foresight, founded on a profound knowledge of the laws of social development, of the driving forces and advantages of the socialist system. It is the great charter of communism. The Program is imbued with the spirit of socialist internationalism, genuine humanism, and the ideas of peace and brotherhood among peoples. In it the slogan "Everything in the name of man, for the good of man" is fully embodied; it expresses humanity' s age-old dream of a just society in which Peace, Labor, Freedom, Equality, Brotherhood, and Happiness for all peoples will prevail.

The building of communist society requires, above all, the creation of a material and technical base capable of ensuring the highest standard of living in the world for the people, an abundance of material and cultural goods. It presupposes the further transformation of social relations, the elimination of differences between classes, and their merging into a classless society of the working people of communism. The building of communism means eliminating essential differences between town and country, between physical and mental labor, expanding the economic and ideological community of nations, the flourishing of the humane traits of the person of communist society, and the broad development of socialist democracy. All these conditions must prepare the possibility for the complete implementation of the principles of communist self-government.

Our century has been marked by the greatest scientific revolution, which has led to an extraordinary rise in natural science. Penetration into the deep mysteries of nature is opening ever new horizons before humankind. Only under socialism does science, freed from capitalist self-interest, from the pursuit of profit, from the bourgeois shackles that enslave it, receive full scope for revealing its potential possibilities. "The progress of science and technology," the Program says, "under the conditions of the socialist economic system

makes it possible to use the riches and forces of nature most effectively in the interests of the people, to discover ever new types of energy and create new

materials, to develop methods of influencing climatic conditions, and to master outer space. The application of science is becoming a decisive factor in the growth of society' s productive forces."

Recent times have been marked by the outstanding successes of Soviet science. Significant advances have been achieved in physics, mathematics, and cybernetics; in the development of automation and telemechanics, radio engineering and electronics; in the creation of the most advanced jet and rocket technology; in the creation of high-speed computing machines; in the development of the chemical theory of chain reactions and the chemistry of polymers. Important research has been carried out in biology; major deposits of minerals have been discovered and studied; a broad front of work has been opened up for the realization of thermonuclear reactions. Finally, it was our country—the country of victorious socialism—that was the first to open the era of using atomic energy for peaceful purposes and the first to pave humanity' s way into space.

In carrying out the great plan for building communism in our country, the role of science is exceptionally great. The Party Program, built on scientific foundations, regards the development of science as one of the most important conditions for the building of communism. The Twenty-Second Congress of the CPSU set Soviet scientists the task of "attaining, in the development of Soviet science, a level that would make it possible to win leading positions in all the principal fields of world science and technology." In the process of building communism, "science will become, in full measure, a direct productive force" (Program of the CPSU). The fulfillment of this role creates the necessity for a further rise in the level and purposeful orientation of scientific research.

The Party Program indicates that the movement of science in the immediate period will be directed toward the development of theoretical research and, at the same time, toward the combination of science with production.

The leading branches of natural science are being brought to the fore: mathematics, physics, chemistry, and biology, with the development of which the rise and effectiveness of the technical, medical, agricultural, and other sciences are inseparably connected.

The study of the country' s energy and fuel balance; the search for ways of making the best use of natural sources of energy; the development of the scientific foundations of a unified energy system; the discovery of new sources of energy and methods for the direct conversion of thermal, nuclear, solar, and chemical energy into electrical energy; the solution of the problem of controlling thermonuclear reactions; the investigation of the properties of plasma; the development of quantum radiophysics, the physics of elementary particles of high energies and their interactions—all these tasks confront Soviet science in all their theoretical and practical significance.

Socialism creates the most favorable conditions for the elimination of manual labor, for the comprehensive mechanization and automation of production, with an ever greater transition to automatic workshops and enterprises. All this

requires the development of the theory and principles for creating new machines, automatic and telemechanical systems, and the intensive development of radioelectr···

tronics, the development of the theoretical foundations and further improvement of computing, control, and information machines. Research must be strengthened in mathematical logic, solid-state physics, the theory of plasticity and strength, semiconductor devices, and the creation of materials with specified mechanical and electrophysical properties.

The great tasks in the field of the chemicalization of the national economy make it necessary to study chemical processes theoretically, to develop new and more advanced technological methods, and to create high-quality and inexpensive artificial and synthetic materials, as well as new preparations used in medicine and agriculture.

Scientists working in the field of geological, mining, and related sciences are developing ever more broadly the theoretical foundations for the search for mineral resources, the problems of further improving existing and finding new, more effective methods of prospecting for minerals and of the comprehensive use of natural wealth. In the near future, research in the eastern regions will be significantly expanded, and the study of ever deeper strata of the earth will be undertaken. The provision of the Program concerning the protection of nature, the rational use of its wealth, and the restoration and augmentation of natural resources, which constitute a great national asset, is acquiring exceptional significance.

Major advances lie ahead in the development of the entire complex of biological sciences. This is connected, above all, with the fact that science has come close to explaining the physical and chemical mechanisms of a number of vital processes. The Party Program sets before these sciences, as their chief tasks, the elucidation of the essence of the phenomena of life, the discovery of the biological laws governing the development of the organic world, and the development of various means of controlling vital processes—in particular, metabolism, heredity, and directed changes in organisms. The Michurin direction in biological science will develop more broadly and deeply.

Great prospects in the study of nature and in the investigation of the planets and the Sun have opened up as a result of the creation of artificial Earth satellites and space rockets, which have opened humanity' s path into space. The study of the influence of cosmic phenomena on the elemental forces of nature on Earth, the use of satellites to improve radio and television communication throughout the globe, and further penetration into the depths of cosmic space and to the planets—all this will lead to unprecedented possibilities for bringing the forces of nature under human control.

In the epoch of the full-scale construction of communist society, the creative development of Marxist-Leninist theory acquires still greater significance. Research in the social sciences constitutes the scientific basis for guiding the de-

velopment of society and a powerful weapon in the struggle against decaying bourgeois ideology, for the education of the person of communist society. In connection with the rapid development of science, the elaboration of the philosophical problems of modern natural science, of dialectical and historical materialism as the sole scientific worldview and method of cognition, becomes still more urgent.

Great tasks also stand in the matter of organizing scientific work and increasing labor productivity in science. The reorganization carried out in the country—

nization of the administration of science has created conditions for coordinating the scientific work carried out in the USSR Academy of Sciences, in sectoral research institutions, and in higher educational establishments. By transferring work on sectoral problems to departmental organizations, the USSR Academy of Sciences has gained the opportunity to concentrate its efforts on the leading theoretical problems, on improving ties with the creative labor of the people, with the practice of communist construction. Conditions have been created for improving the planning of science, especially for the development of comprehensive problems of major scientific and practical significance.

The problem of providing scientific research with the most advanced scientific equipment, instruments, apparatus, reagents, and so forth will require great attention on the part of industry.

Great and responsible are the tasks facing science. "Science," said N. S. Khrushchev, "is increasingly becoming a direct productive force, and production the technological application of modern science." Soviet scientists, like the entire people, inspired by the historic decisions of the Twenty-Second Congress of the CPSU, will devote all the powers of their minds, all their creative energy, to the great cause of building communism in our country.

Note: Figure translations are in progress. See original paper for figures.