

Russia Works Around Clock On Science

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How has Russia accomplished so much in science? It is a question many Americans are asking. The answer is disarmingly simple. They are working at it—and at top speed.

Nearly 250,000 Soviet scientists toil day after day in some 3,000 different Soviet institutions creating and developing projects which will increase their country's scientific might.

The Soviet government supports with a lavish hand this ever growing corps of scientific researchers—and generously provides equipment, laboratories, observatories, libraries and whatever else they need for their work. It gives science and science education an AAA priority claim on government expenditures.

This—the quantity of men and money devoted to science—is one of the reasons for the Soviet scientific strength demonstrated so vividly in the launching of the first artificial satellite. But it's not the only reason.

Talent, Ability

Another is quality—the talent and ability of Soviet scientists.

A famous example is Peter Kapitza, who once taught at Cambridge University in England and then returned to his native land to win the wide recognition throughout the world for his research on magnetic fields, low-temperature physics and other aspects of basic science.

Another is Nikolai Semyonov, Moscow professor of physical chemistry, who won a 1956 Nobel prize for his studies of the conduct of molecules when they blow up in chain reactions or combine smoothly.

Kapitza and Semyonov are just two among hundreds of brilliant leading Soviet scientists who set the tone for all scientific work in the country and who are descendants of strong Russian scientific tradition exemplified in other times by such geniuses as the physicist Dmitri Mendeleev, discoverer of the table of atomic weights, and Ivan Pavlov, the physiologist who revealed the mechanism of conditioned reflexes in living beings.

Beyond the quality and quantity of Soviet scientific work another source of its strength lies in its organization—and the ability to use the organization to get things done.

Literally hundreds of laboratories and research groups can be pressed into a project which in this country would be called a crash program. In such crucial fields as atomic development and missiles, the totalitarian organization of the Soviet state has paid off.

On such a project as Sputnik or the H-bomb, the Kremlin can and does direct the implementation of crash programs for the attainment of quick results.

In contrast, although the United States used this technique on the famous Manhattan Project during World War II, it has not used it in peacetime.

Much of the national energy of the U.S.S.R. is being devoted to the crash development of Soviet science as a whole. It is this, rather than any single Russian discovery or development which makes Soviet science a most serious competitor of American science.

But totalitarian state organization and centralized scientific organization also have a negative side. When Joseph Stalin tried to impose the rule of T. D. Lysenko and his concept of inheritance of acquired characteristics on Soviet biology he set back biological work for years. Communist party rule over Soviet science on more than this one occasion has held back scientific development. Even today all the social sciences including economics are insignificant because they impinge on Leninist dogma.

Directing Work

Coordinating and directing the work of about 1,500 different large scientific institutes of the U.S.S.R. and the research organizations of hundreds of different higher educational institutions and economic organizations scattered throughout the country is the Academy of Sciences in Moscow. The Academy was founded in 1724 by Peter the Great.

The government-supported Academy is headed by the outstanding organic chemist Alexander Nesmeyanov, former head of Moscow University. It possesses some eight different branches, each supreme in its own field. It has some 14 junior academies in the republics of the Soviet Union.

The academy is not the only powerful and well-heeled organization in the science business in the U.S.S.R.

In the town of Dubna north of Moscow there is the Joint Nuclear Research Institute for Basic Study of the Atom. This institution was founded with the deliberate purpose of attracting into scientific work in the U.S.S.R. brilliant foreign scientists as well as those of the Soviet Union.

It has the world's largest atom-smashing machine—a proton synchrotron of 10 billion electron-volts capacity—which is 40 per cent more powerful than the largest such basic research machine in the United States.

Heading up Soviet work on peaceful uses of atomic energy is a special administration headed by Vasily S. Eremeyev, who in 1956 visited the United States to see American progress in this field.

The Medium Machinery Ministry is a cover designation for the Soviet atomic weapons production authority which is now run by E. P. Slavya, a little known expert on nuclear energy.



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