Science in the News

Soviet Scientific Information System Held To Be Much Like Ours in Structure and Operation

The scientists, engineers, and administrators who have to cope with the problems of distributing to their colleagues the published work of researchers in their own and other countries often cite the Soviet Union as the nation where this problem is best handled. One national center, well-staffed and solidly financed, does the job there, they say, of translating, abstracting, and distributing published scientific reports and papers both from within the country and from without. It has been suggested that we might profitably imitate this approach.

But reports from recently returned visitors to the Soviet Union and Poland indicate that the "approach" is changing, and that if we were to imitate it as it is today, we would, in effect, be imitating ourselves. There is not just one center, but a complex system, these reports indicate, and the general trend in the system is toward greater decentralization, with more emphasis placed on regional sub-units than on national centers. The methods of distributing reports on domestic and foreign research are far from perfect, the visitors report, and there is frequent criticism, both in scientific journals and during national and international meetings. Mechanical means of speeding up distribution are, in many cases, not even in the blueprint stage.

These points and others, which experts in the United States had guessed, were confirmed during the 25th conference of the International Federation for Documentation held in Warsaw in September. Burton W. Adkinson, a U.S. delegate to the conference and head of the Office of Scientific Information Service of the National Science Foundation, took the occasion to question the Soviet delegates on matters concerning the changing scientific information system in their country. He based his questions on information that had been gathered by his Washington staff and on material supplied by delegates from some of the satellite countries.

State Committee in Control

The informal conversations between Adkinson and the Soviet representatives brought out the fact that the All-Union Institute of Scientific and Technical Information, which is generally regarded in this country as the one central organization for distribution of published scientific information, is just one of the units of a larger structure and not the most important or influential. The larger unit, the State Committee for Science and Technology, both directs the All-Union Institute and maintains its own information office, which according to reports has the more significant role. This office, the Department of Scientific and Technical Information, under the direction of Oleg A. Mikhailov, has responsibility for all of the scientific and technical information centers for industry. This responsibility, when viewed in relation to other political and economic developments in the Soviet Union, explains the new and growing influence of Mikhailov's department.

Briefly, these developments are as follows. A reorganization, begun in May 1957, of Soviet industry transferred control of the industries from the various ministries to regional groups. As a consequence, the scientific and technical information system which had served the industries had to be decentralized. The change in organizational structure did not affect the technical information services alone, because much basic research has always been conducted in industrial laboratories. These decentralized industries, scattered widely throughout the U.S.S.R., needed some means of keeping their scientists and engineers abreast of new developments. The coordination of these information centers was given to Mikhailov's department.

Because of this responsibility for all of the regional industrial centers, and because of the scientific work done in them, the department has outstripped the All-Union Institute as a center for processing scientific information. There are, Adkinson reports, many indications of the changing roles of the State Committee vis-à-vis the All-Union Institute. Most translation of foreign journals, for example, is no longer done at the institute. Only one of the scientific review series is published by the institute. Research in methods of mechanized information-processing is being carried on largely in universities, not at the institute. Recently the institute has been given the job of publishing a number of new abstract journals dealing with the fields of transportation, public health, mining, and construction. These facts are viewed by observers as evidence that applied science and technology are being given the greater emphasis, and that Mikhailov's department is benefiting.

Similarity to U.S. Pattern

The end effect of the changes now taking place in the Soviet Union, Adkinson and other observers suggest, is that the Russian researcher learns about the work of others in his field in much the same way that his American counterpart does. Each industry has a center from which he can receive abstracts of relevant papers. This large center supports smaller centers in the individual factory. These regional units offer abstracting, translation, and extracting services as well as literature searching and bibliographic service, and all provide regular library service. New journals are started as they are needed, and they are staffed by men directly involved in the field of science concerned. Academy or institute authorization is almost always required before publication of a new journal is undertaken.

According to very recent reports, the "give-away" period, during which Soviet scientists and engineers could receive translations and abstracts for a nominal fee or free of charge, is now coming to an end. Soviet scientific-information practices are becoming "very Western," one recent visitor reports. One major difference does remain. The system of professional journals, abstracting services, and society publications used in this country developed from the needs of the sciences and technologies concerned. It is part of the pattern of private enterprise. The Soviet system is state directed and closely tied to national planning.

Visitors to the Soviet Union report

that if one is interested in gaining information from Soviet officials, the best approach is to ask, not how things work, but, rather, whether this is the way things work. If the questioner can show an official that he is fairly well informed, he has a better chance of getting an answer. If the reports are correct, American scientists attempting, for example, to arrange an exchange of scientific publications might well take advantage of the new system for handling scientific information in the U.S.S.R.

Cooper Union's Second Century

The 100th anniversary of The Cooper Union for the Advancement of Science and Art in New York was celebrated on 2 November. Delegates of about 300 educational institutions and societies marched in the academic procession that opened the centennial observance.

In the course of sessions on "New Values in Science, Art, and Society," Laurence M. Gould, geologist and president of Carleton College, spoke on "Education and Society," and Sir Kenneth Clark, art critic and historian and chairman of the Arts Council of Great Britain, discussed "Art and Society." Two recipients of Nobel Prizes shared an afternoon session devoted to "Science and Society." They were Sir John Cockcroft, physicist member of the United Kingdom Atomic Energy Authority and master designate of the new Churchill College of Cambridge University, and Harold C. Urey, professor-at-large of chemistry at the University of California, La Jolla.

Cooper Union is the oldest tuition-free, private educational institution in the United States. It consists of a day and evening school of engineering, a day and evening school of art and architecture, an adult education division, a museum for the arts of decoration, and a library.

The Union's undergraduate schools of engineering and art are open to all residents of the United States, regardless of race, religion, or sex, who qualify in the competition for admission. Talent and intellectual ability are the basic requirements for entrance. Of the 1597 applicants tested in 1958, 396 were accepted; this brought the current enrollment to 1300.

Since its founding, Cooper Union has offered free public lectures and programs. Its evening forums attract audiences of about 1000 people, three times a week.

History

Cooper Union was founded by Peter Cooper (1791–1883), builder of "Tom Thumb," the first American locomotive; sponsor, with Cyrus Field, of the laying of the Atlantic cable; and ironmaster who fabricated the iron beam which made possible construction of the skyscraper. He was perhaps the first wealthy man to maintain, and support by action, the tenet that wealth is a trust to be used for the benefit of the public. In starting the school, his purpose was:

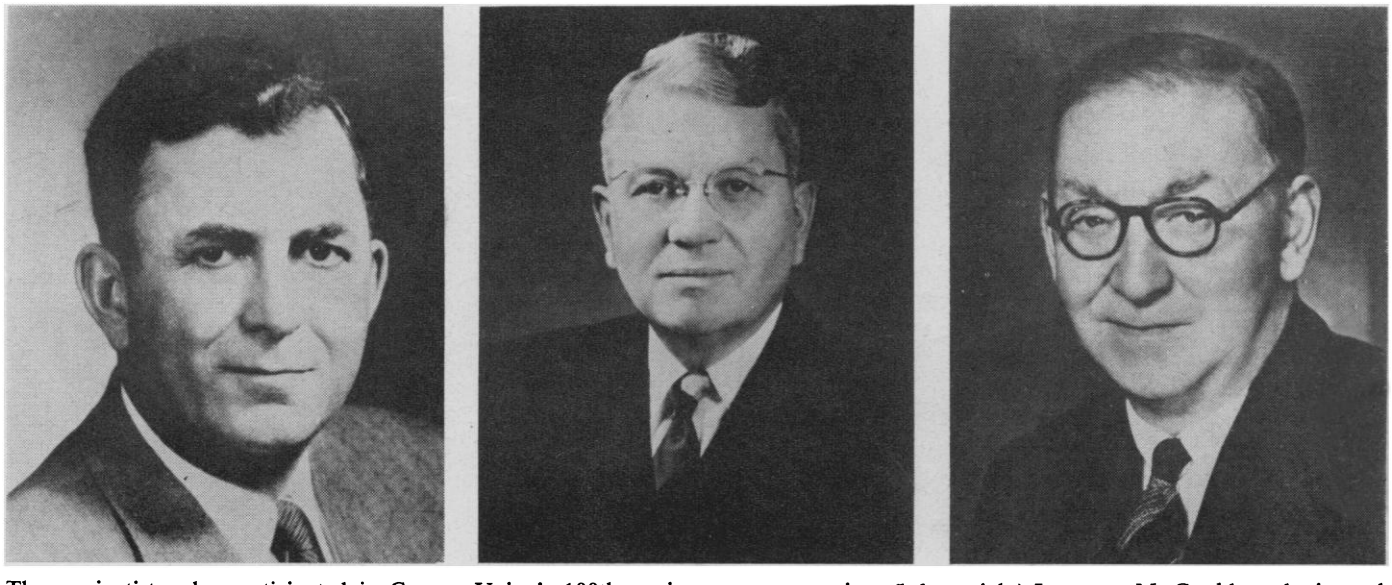
"To provide regular courses of instruction at night free to all who shall attend the same on the application of science to the useful occupations of life, and on such other branches of knowledge as will tend to improve and elevate the working classes of the City of New York.

"To provide and maintain a school for the instruction of respectable females in the arts of design and to afford to respectable females instruction in such other art or trade as will tend to furnish them suitable employment."

When evening classes began on 7 November 1859, 2000 men and women, each armed with a certificate of "good moral character," then the only requirement for entrance, presented themselves for instruction in mathematics, chemistry, mechanical philosophy, architectural drawing, free-hand drawing, and vocal music. Historian Allan Nevins says Cooper Union was the "first great experiment in adult education in this country . . . It was also the first great trade school for women in America."

The contrast between the Cooper Union of 1859 and that of today is spectacular. In 1859 the faculty numbered 20 teachers, as against 160 now. The first annual budget was about $35,000; today's budget is about $1,750,000. A century ago, when a college education was for the few, Cooper Union offered a modest education for the many. Today, with more than 3 million Americans in colleges, Cooper Union's role has changed to that of giving, insofar as it is financially able to do so, the best possible professional education without cost to the selected few who prove themselves best able to use it.

In connection with its centennial observance, which will continue through



Three scientists who participated in Cooper Union's 100th anniversary convocation: (left to right) Laurence M. Gould, geologist and president of Carleton College; Harold Urey, professor-at-large of chemistry at the University of California, La Jolla; and Sir John Cockcroft, physicist member of the United Kingdom Atomic Energy Authority.