peasants and primitives can be a creative social process. Cantel teaches the general lesson that the upheavals in people's lives that often go along with industrialization are not built into the process itself. They are probably the result of an image of man in social change which delineates him as the passive agent mechanically responding to immutable forces, or as the pawn in a political chess game, or as expendable material in an economic plan.

References and Notes

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5. The photographs are reproduced from F. W. McBryde, *Cultural and Historical Geography of Southwest Guatemala* (Smithsonian Institution, Institute of Social Anthropology Publ. No. 4, Washington, D.C., 1947), with permission.

Science in the News

American Group Studies Soviet Programs for Disseminating Scientific Information

During a recent trip to Moscow, a group of American information-processing specialists had an opportunity to learn about the Soviet Union's two principal programs for disseminating scientific and technical information, one conducted by the All-Union Institute of Scientific and Technical Information and the other, by a division of the State Scientific and Technical Committee. Five representatives of the National Federation of Science Abstracting and Indexing Services spent a week visiting the All-Union Institute, which is headed by I. A. Mikhailov. The institute's primary function is abstracting scientific and technical publications, both domestic and foreign. It operates under the U.S.S.R. Academy of Sciences; however, in some ways, not clearly defined, it is also related to the State Scientific and Technical Committee.

The American mission included Dale B. Baker, director of the Chemical Abstracts Service; G. Miles Conrad, director of Biological Abstracts; John C. Green, director of the Office of Technical Services, U.S. Department of Commerce; Mordecai Hoseh, Washington editor for the Chemical Abstracts Service; and Raymond A. Jensen, executive secretary of the federation.

The group started its study tour on 22 October with a general discussion session that was followed by a visit to the institute's systematization department, where about 15,000 periodicals are scanned for pertinent material and cataloged. Separate articles are distributed to the various editorial offices for more detailed examination. About 2500 to 3000 articles a day are received, in 65 languages, from 95 countries.

The group divided up in accordance with the special interests of its members to visit the different editorial offices, which assign papers to abstractors (usually professional scientists and engineers outside the organization), edit abstracts, compile indexes, and perform other routine editorial work. The institute has about 2000 employees and publishes some 14 abstracting journals.

Machines and Express Service Explained

In a session presided over by S. M. Lisitchkin, first deputy director of the institute, the group met with machine searching and retrieval experts. Professor L. I. Gutenmakher and Dr. Sofer explained the construction and operation of an electronic logical machine that they are developing for use in retrieving chemical information. Later Mr. Rakov discussed and demonstrated the application of punched-card data-processing equipment to the institute's fiscal and statistical work.

The methods systems and machine research at the All-Union Institute are just getting organized. A. D. Cherny of the institute and the staff of Gutenmakher's laboratories, with the various editors cooperating, are in charge of this work. One of the visitors reports that an institute spokesman expressed the opinion that the claims made for electronic equipment have exceeded actual results.

In another session, led by Lisitchkin, the operation of the Express Information Services was explained. This activity is responsible for producing about 50 series of publications on various subjects of interest to workers in industry. So far the express service has functioned separately, but soon the work will be carried out by the staffs of the various abstracting journals. About 2100 foreign journals, mostly English-language publications, are selectively examined for articles to be summarized. The issues appear every 10 days.

Members of the group also met with Madame I. A. Lunacharskaya, head of the institute's acquisition and exchange department, to discuss mutual exchange problems and prospects for increasing the two-way flow of material.

Cooperation Achieved

Throughout the visit, the U.S. group was especially impressed by the warm and friendly atmosphere in which the meetings were conducted. At the outset the visitors were invited to select whatever institute activities they most wanted to see. Questions were freely asked and freely answered, and detailed inspection of equipment and procedures was permitted. Team members believe that they are the first Americans to have been afforded such opportunities for examination of equipment and exchange of views.

Besides gaining insight into the operation of the institute and its component parts, the group reached an understanding on ways of obtaining closer cooperation in furthering the exchange of

technical and scientific literature, in compiling lists of periodicals, in procuring hard-to-obtain periodicals, and in exchanging information on documentation and machine methods of handling information. The group also achieved an understanding for closer cooperation between the institute and the federation, and groundwork was laid for future meetings between the two organizations.

One of the Travelers Comments

An interview with Mordecai Hoseh, the only member of the group who could speak Russian, produced some interesting observations. Hoseh says that the Soviet position in information processing is in many ways similar to our own. As in the United States, workers in the field are not satisfied with present methods for handling the ever-growing volume of material and are constantly seeking new methods, although, contrary to the situation here, they are inclined to belittle the potential value of machines for this purpose.

Abstracting speed is about parallel with ours—in some fields fast and in others slow. In some cases abstracts of papers published in the United States appear in Soviet journals a year ahead of their appearance in this country, and vice versa, However, Soviet indexing is far behind ours, according to Hoseh, but he says that attention is being concentrated on this problem.

Hoseh emphasized one point. He feels strongly, and other members of the group concur, that information specialists and others visiting the U.S.S.R. must be careful to be objective in their observations. They must view facts. Hoseh commented that the Soviet government, like all governments, has interdepartmental rivalries, such as the one now raging between the U.S. Department of Agriculture and the Food and Drug Administration. He urged that visitors to the U.S.S.R. be careful to remain outside the inevitable internal conflicts or the whole purpose of a mission may be lost.

Hoseh also commented, as have so many others, that Soviet scientists and educators are held in very high esteem. However, he pointed out that this respect for the intellectual is by no means a purely Soviet characteristic, but rather a traditional European one.

Industrial Information Agency

Although the U.S. group was formally visiting the All-Union Institute, John Green had a rewarding conference with Oleg A. Mikhailov, director of technical information for individual branches of industry for the State Scientific and Technical Committee. The committee, which is headed by Y. E. Maksarev, is under the Council of Ministers of the U.S.S.R. Mikhailov directs an organization that emphasizes service to industry and, in this objective, has a function similar to that of our own Office of Technical Services in the U.S. Department of Commerce, headed by Green. For some reason this industrial information agency has received scant attention in this country, although it is comparable to the All-Union Institute in importance.

A few weeks ago Burton W. Adkinson of the National Science Foundation attempted to remedy this when he returned from the International Federation of Documentation meeting in Warsaw. However, his remarks to the press were to some extent misinterpreted, and this led to reports that Mikhailov's agency was a secret one, newly discovered. Actually, it was described in the Soviet literature as early as 1957.

Adkinson, who heads the NSF Office of Scientific Information Services, says that it was his intention merely to call public attention to the fact that the U.S.S.R. has not one but two major information agencies, each quite different from the other. He points out that the highly centralized All-Union Institute has often been discussed, while Mikhailov's large, decentralized organization has hardly been mentioned.

Operation Described

The details of the industrial unit's operation are not yet entirely clear to observers in this country. It is known that the agency selects, evaluates, and disseminates technical information, whether or not it has been previously published, through a network of industrial centers of various kinds. In the Soviet Union, each major industry has its own training and research institutes.

(Top) O. A. Mikhailov, director of technical information for individual branches of industry of the U.S.S.R.'s State Scientific and Technicial Committee; John Green, director of the Office of Technical Services, U.S. Department of Commerce; M. Hoseh, Washington editor for the Chemical Abstracts Service; translator; V. V. Serpinsky, editor and chief of the *Referativnyi Zhurnal, Khimiya;* G. Miles Conrad, director of Biological Abstracts; A. I. Mikhailov, director of the All-Union Institute of Scientific and Technical Information. (Left) Dale B. Baker, director of the Chemical Abstracts Service; Raymond A. Jensen, executive secretary of the National Federation of Science Abstracting and Indexing Services; Intourist guide.

Mikhailov told Green that his main office had only about 60 employees, but that he had ten "Central Bureau Institutes" of information. Presumably these are bodies organized by industrial field, such as the Central Bureau of Scientific and Technical Information for Heavy Industry and the Bureau of Technical Information and Propaganda in the Meat Industry.

In each of these organizations 60 percent of the activity is devoted to processing information — acquisition, scanning, cataloging, abstracting, preparing, and so forth—and 40 percent to distribution. The central bureaus all publish journals, and each issue of these contains a prescribed number of suggestions to industry. Mikhailov also referred to 60 or 70 smaller regional units. In addition, he mentioned that his office maintains reporters at big plants.

Aside from the obvious organizational differences, the key difference between the All-Union Institute and the industrial information agency is that one provides broad scientific and technological information for which the user must ask, while the other feeds highly selected material to the predetermined user. Most observers agree that the two bodies complement each other.

The group from the National Federation of Science Abstracting and Indexing Services also visited centers in Poland, Holland, and Denmark. As a result of these travels, they concluded that there is no single national plan which merits adoption by all. Since alternate plans are feasible, any nation planning to make special efforts in this field should carefully inventory its existing methods of collecting information and its communication links. Thereafter a national plan should be devised which takes maximum advantage of these important resources and which responds to the country's special needs.

U.N. Assembly Asks All States To Halt Atom Tests

Following are the texts of two resolutions adopted in New York on 21 November by the United Nations General Assembly which call for a halt in nuclear and thermoneuclear tests.

The General Assembly, recalling its resolution 1252-B (XIII) of 4 November 1958.

Noting that the negotiations on the discontinuance of nuclear weapons tests and on the establishment of an appropriate international control system which began at Geneva on 31 October 1958 are still continuing,

1. Expresses its appreciation to the states concerned for their efforts to reach an agreement relating to the prohibition of nuclear weapons tests and including an appropriate international control system;

2. Expresses the hope that these states will intensify their efforts to reach an agreement at an early date;

3. Urges the states concerned in these negotiations to continue their present voluntary discontinuance of the testing of nuclear weapons;

4. Requests the states concerned to report to the General Assembly the results of their negotiations.

Second Resolution

The General Assembly,

Desiring to safeguard mankind from the increasing hazards resulting from tests of nuclear and thermonuclear weapons,

Bearing in mind the profound concern evinced by the peoples of all countries regarding the testing of nuclear and thermonuclear weapons,

Welcoming endeavors at Geneva of the states concerned to reach an agreement on the discontinuance of these tests and the progress so far achieved,

Noting with appreciation that the states concerned have voluntarily suspended such tests, enabling progress in the discussions at Geneva,

Considering that an agreement on the cessation of nuclear and thermonuclear tests with effective international control is urgent,

1. Expresses its appreciation to the states concerned for their patient and sincere efforts to reach agreement on the discontinuance of nuclear and thermonuclear tests with effective international control and for the progress hitherto achieved;

2. Expresses further the hope that the states concerned will reach such agreement at an early date;

3. Appeals to the states concerned in the Geneva discussions to continue their present voluntary suspension of tests and to other states to desist from such tests;

4. Requests the states concerned to report to the Disarmament Commission and to the General Assembly the results of their negotiations.

Scientists and Writers Discuss Public Misconceptions of the Nature of Basic Research

A close look at public attitudes towards science and scientists at the Thomas Alva Edison Foundation Conference on "The Mass Media and the Image of Science" on 6 November yielded some sharp opinions on the American citizenry's ability to absorb scientific information. Speakers at the Washington conference—attended by some 300 scientists, broadcasters, and journalists—deplored the public's narrow notions of what science is and what its real aims are.

Chief criticism came from National Science Foundation director Alan T. Waterman, who asked for change in the current image which identifies science "with technical industry and its product." Asserting that science has for too long been held "in the public view to be an entity unto itself, quite disassociated from other elements of our cultural heritage," Waterman urged directors of mass media to help build "a climate of excellence" in which science would be seen as an adventure of the mind and the spirit."

This view was seconded by John R. Platt, professor of physics at the University of Chicago, who said that the public is tired of facts—that "quiz-show facts" are not enough to yield a serviceable image of science. He asked science writers to take up the challenge of communicating what he called "the sweep and excitement" of basic science and the "intellectual thrills" it afforded.

A comparison of Russian and American attitudes showed the U.S. taking second place in this regard. Both Waterman and Princeton chemist John Turkevich, who recently visited the U.S.S.R., attributed a greater general appreciation of science to the Russians.

"Science controls the picture over there," Turkevich said. And he cited the close liaison between scientists and other creative people—artists, writers, and so on—in the U.S.S.R. as a major reason why Russians are generally better informed about scientific developments.

How much information is the American public absorbing? Depressingly little, was the report made by another participant at the Edison Foundation Conference. Earl Ubell, science editor for the New York *Herald Tribune*, reported on a recent survey undertaken