

Please return to  
J. A. Sternberg

OPE 01-68

Scientists' Institute for Public Information

# SIPI Report

Fall 1970 Issue

Volume 1 Number 1

See page 2 for  
credentials: a distinguished  
group! P. 4: re "Air Pollution"  
Workbook.

## Task Forces Begin Work

Pesticides and electric power are the topics to be discussed in the first two SIPI task force reports. Work has begun on these documents, made possible by a grant from the Sloan Foundation. They will extensively document and interpret available relevant information on these two major technologies, and are being designed for use by scientists involved in science information activities across the nation. In addition, less technical versions of the final documents are planned for the use of non-scientists. The task force reports now in preparation are the first of a planned series written by task forces of experts to explain the scientific factors involved in a variety of important issues.

### The Task Force Idea

The SIPI task force program has developed in response to the greatly increased need of science information committees and concerned individuals for comprehensive, detailed, and readily accessible technical information on important topics, particularly in matters of environmental degradation. As the number of committees grew and as the groups became concerned with the whole range of environmental problems, they were faced with the task of developing and collecting their own technical material on many controversial subjects. Consequently there has been much unnecessary duplication of effort, and a relatively long fact-gathering period before new committees are prepared to participate in the wide variety of environmental problems that face them. The need for adequate technical knowledge is most urgent when new environmental problems, or incidents leading to public awareness of long-standing problems, suddenly emerge. Unfortunately, such knowledge has often not been at hand in the science information committee of the community, and has therefore had

to be painfully assembled from outside sources.

When such situations have arisen, SIPI and affiliated committees have eased the local information crisis whenever it was feasible to do so within their limited resources. In such cases, SIPI and its affiliates have arranged for appropriate experts from one or more of the committees to visit the area and work with local scientists. In addition, the magazine *Environment*, which is published by one of SIPI's affiliated organizations, the St. Louis Committee for Environmental Information, is a steady source of information on environmental problems. Although it is written for the non-scientist, *Environment* has also provided scientists an important orientation to key topics, including a listing of valuable references after each article. However, the informal

exchanges of information, the costly task of coordinating and transporting scientists whose locales are widely separated, and the use of *Environment* are methods which must now be supplemented if science information committees and individual scientists are to function most effectively.

For this purpose SIPI has launched its task force program. Each task force will gather information and prepare a report that will collect comprehensive and up-to-date technical data on a particular environmental situation. This will include any important controversies that surround the subject and a detailed bibliography. The reports will allow scientists unfamiliar with the material to prepare themselves for speaking knowledgeably to the public.

continued on page 2

## Environmental Workbooks Published by SIPI

SIPI has recently produced a series of eight workbooks on various environmental problems, designed for the many students and other citizens seeking environmental information for the first time. These workbooks, written by experts on each topic discussed, were published in March and April in time for the teach-in activities on many campuses around the country.

Margaret Mead, President of SIPI, announced the workbook project at the annual meeting of the American Association for the Advancement of Science in Boston, December 29, 1969, soon after the SIPI Board approved the preparation of the workbooks at its last meeting December 14. Dr. Mead pointed out that the Scientists' Institute, in its work of providing citizens the latest scientific in-

formation on public issues through its local committees, has felt increasing public concern with problems of the environment. She reported the statement of students who recently attended a Nobel Foundation conference of scientists and students in Stockholm: "The waters are rising; we have no tools to build boats." The student group expressed its apprehension at our failure to anticipate side-effects of technological progress.

"What the Scientists' Institute proposes to do," she said, "is to prepare a series of workbooks for concerned citizens. Each one will deal with a single major social problem, such as air pollution or the environmental contamination arising from the use of chemical pesticides, which cannot be understood without

continued on page 3

The Scientists' Institute for Public Information seeks out, informs, and enlists scientists of all disciplines in public information programs relevant to a variety of social issues. The Institute serves as the national coordinating body for local science information committees and seeks to stimulate and integrate their work and promote their growth.

The scientific information provided to the public by all groups and individuals affiliated with SIPI is developed and presented by professionally competent scientists with traditional scientific accuracy and objectivity. Attention is given to divergent views; moral and political judgments are not made. Information is made freely available to all, in the belief that the dissemination of such information is necessary for a democratic society in a technological age.

The *SIPI Report* is published four times each year, and presents news of the Scientists' Institute for Public Information and its affiliated committees. The *Report* also includes items of interest to scientists and other citizens engaged in science information work. Articles and comments from readers are welcomed. The *SIPI Report* is available from the headquarters of the Scientists' Institute for Public Information, 30 East 68th Street, New York, New York 10021.

Editor of *SIPI Report*: Albert Bradford  
Assistant to the Editor: Mari Wasson  
Designer: John Lennard

## Task Forces

cont. from p. 1

Every task force will be composed of experts on various aspects of the subject being presented. The increasing number of scientists participating in the information movement over the last few years makes such task forces possible. Each task force chairman will be a scientist whose background will enable him to serve as technical editor of the report. A subcommittee of the SIPI Board will designate each chairman, and help him in the selection of members for his task force. Where possible, task force members will also belong to information committees upon whose resources the task force may draw. The collected data will be given by the task force scientists to the

general editor of the report, who will prepare a complete, readable version of the report and submit it to the task force for final review. SIPI will then publish the completed report and distribute it to committees, individual scientists, and other interested persons. SIPI plans to revise and update each report as often as necessary.

## Pesticide Reevaluation Report

The task force to assemble information on pesticides held its first meeting in Berkeley, California, April 3, 1970, under the chairmanship of Robert van den Bosch. Dr. van den Bosch, who is Chair-

man of the Division of Biological Control in the Department of Entomology and Parasitology at the University of California at Berkeley, has conducted extensive research on cotton insects and the effects of pesticides used in cotton agriculture. He is recognized as an expert on the effects of DDT and other pesticides, and has provided testimony at hearings and meetings around the country. Dr. van den Bosch is an active member of one of SIPI's affiliates, the Northern California Committee for Environmental Information. He is spending the summer of 1970 in the Middle East collecting parasites for use in biological control programs and experiments.

## Institute Board of Directors

President: Margaret Mead, Ph.D.  
*American Museum of Natural History*

Chairman: Barry Commoner, Ph.D.  
*Washington University, St. Louis, Missouri*

Vice-Chairman: Dean E. Abrahamson,  
M.D., Ph.D.  
*University of Minnesota*

Secretary: Allen C. Nadler, M.D.  
*Salinas, California*

Treasurer: Peter J. Caws, Ph.D.  
*City University of New York*

Executive Director: Walter Bogan

## Members

George Berg, Ph.D.  
*University of Rochester*

Nathan E. Cohen, Ph.D.  
*University of California*

Donald L. Dahlsten, Ph.D.  
*University of California*

James P. Dixon, Jr., M.D.  
*Antioch College*

Theodosius Dobzhansky, Ph.D.  
*The Rockefeller University*

John M. Fowler, Ph.D.  
*University of Maryland*

Lytt I. Gardner, M.D.  
*State University of New York*

Bentley Glass, Ph.D.  
*State University of New York*

Everett M. Hafner, Ph.D.  
*Hampshire College*

Jules Hirsh, M.D.  
*The Rockefeller University*

René J. Dubos, Ph.D.  
*The Rockefeller University*

Gerson T. Lesser, M.D.  
*New York University Medical Center*

Russell H. Morgan, M.D.  
*The Johns Hopkins Hospital*

E. W. Pfeiffer, Ph.D.  
*University of Montana*

Edward L. Tatum, Ph.D.  
*The Rockefeller University*

Halsted R. Holman, M.D.  
*Stanford University Medical School*

Hardin B. Jones, Ph.D.  
*University of California*

Jacques Lipetz, Ph.D.  
*Wistar Institute*

Michael McClintock, Ph.D.  
*University of Wisconsin*

Eric Reiss, M.D.  
*Michael Reese Hospital*

Frederick C. Robbins, M.D.  
*Case Western Reserve University  
School of Medicine*

Warren Weaver, Ph.D.  
*Alfred P. Sloan Foundation*

Warner Wells, M.D.  
*University of North Carolina  
School of Medicine*

Curtis A. Williams, Ph.D.  
*State University of New York*

David J. Wilson, Ph.D.  
*Vanderbilt University*

Earthworks, a student organization dedicated to environmental integrity, sponsored an open-air, multi-college meeting during Earth Week at Miller Stadium, Texas Southern University. Allen Nadler, Secretary of the Scientists' Institute, was a principle speaker at this affair, along with Texas Senator Ralph Yarborough. During the same week, Dr. Nadler spoke at three other colleges, Cabrillo, University of California at Riverside, and San Diego State College.

During the pesticide task force meeting, the general problems associated with the nature, development, registration, promotion, use, and effects of many types of pesticides were discussed, and each scientist on the task force was asked to assemble information on one or more specific aspects of the general topic. The agreement among the participants, many of whom are leaders in their fields of specialization, was to devote significant space to original scientific discussion about important areas of the pesticide problem not generally publicized. It was also decided to title the final document the *Pesticide Reevaluation Report*.

Several of the attending members, including Northern California committee scientists Robert van den Bosch, Donald Dahlsten, and Richard Garcia, gathered and wrote materials for the SIPI environmental workbook, *Pesticides*. This workbook and seven others on various environmental topics were prepared for use of non-scientists by SIPI and were published during the spring of 1970 in time for the environmental teach-in activities. An article on page 1 of this *Report* discusses the workbooks in greater detail.

## Power Report

Work on this task force report on electric power, as with the pesticide report, was preceded by the production of a SIPI workbook, which was called *Environ-*

*mental Cost of Electric Power*. This was not a coincidence. In both cases, organization work began last fall on the task force reports, and workbook-type materials were planned as later by-products of these technical documents. Subsequent events reversed the process. Because of the sudden rise in general public interest in the environment and the great need for introductory materials on important environmental issues, work on the two task forces was postponed and instead the two workbooks were prepared by some members of the task forces. In addition, workbook committees of scientists were chosen and organized by SIPI to gather and write material for six other workbooks.

The workbook, *Environmental Cost of Electric Power*, was prepared in this manner by Dean E. Abrahamson, Ph.D., M.D., Chairman of the *Power Report* task force. Dr. Abrahamson is Associate Professor of Anatomy and Laboratory Medicine at the University of Minnesota and founder and former President of the Minnesota Committee for Environmental Information, one of SIPI's affiliated organizations. He serves also as the Vice-Chairman of the SIPI Executive Board. Before going into medicine, Dr. Abrahamson took his master's degree in physics, and has had experience with the technology of nuclear reactors. He and his fellow scientists on the Minnesota Committee have been a main source of information and advice for the Minnesota Pollution Control

Dean Abrahamson, founder and former Chairman of the Minnesota Committee for Environmental Information and Vice-Chairman of the Scientists' Institute, presented testimony at the January 27, 1970 hearings of the Joint Committee on Atomic Energy in Washington. The subject of these hearings was the environmental effects of producing electric power. Dr. Abrahamson discussed the establishment by the state of Minnesota of strict standards for radioactive wastes released from power plants. Among the more recent meetings in which he has participated was a session of the American Nuclear Society, held on June 29 in Los Angeles. Dr. Abrahamson served as a panelist and discussed the environmental cost of electric power production.

Agency in this agency's challenge to Atomic Energy Commission standards for discharges of radioactive wastes from power reactors. This precedent-setting case is reported in detail in Dr. Abrahamson's environmental workbook in the chapter titled "Power Steering."

Preliminary work on the power task force report has been completed by Dr. Abrahamson in cooperation with other scientists from SIPI affiliated committees. Among the questions being considered in this report are: present and anticipated uses of electric power; the nature of the pressures creating anticipated increases in power consumption; energy reserves; environmental effects of power production and use; alternatives to the projected increases in power consumption; effects of limiting power availability; new technologies which bear directly on power production or consumption; and the economic effects of waste management changes or limitations in power availability.

At this time the *Power Report* is envisioned as a joint effort between SIPI and the Committee on Environmental Alteration of the American Association for the Advancement of Science. A complete report on the organization and work of this task force will appear in the next *SIPI Report*.

## Workbooks

cont. from p. 1

some basic scientific and technical information."

Production of these workbooks was envisioned by the SIPI Board along the same lines as planned for the SIPI task force reports, sponsored by the Sloan Foundation (see story on page 1). The workbook project was considered useful preparation for the much longer and more technical task force treatment of important environmental issues. Following the task force approach, the SIPI Board chose a chairman to prepare each workbook and aided him where needed in selecting other scientists to act as members of his workbook committee. These chairmen were all SIPI members serving science information committees or SIPI in various roles, and drew upon the scientific resources and experience of these organizations. Virginia Brodine, consulting editor of *Environment*, agreed to coordinate the workbook committees, organize the production of the workbooks, and be the main editor. *Environment* is prepared and published by one of SIPI's affiliated organizations, the St.

Louis Committee for Environmental information and is an official SIPI publication. Mrs. Brodine edited *Environment* for many years and has had long and intimate experience with the whole science information movement; the high order of commitment and skills which she and all the workbook committees displayed in gathering and organizing information and preparing the workbooks, made it possible to publish the complete series in time for the teach-ins.

In their final form, each workbook contains an introduction by Dr. Barry Commoner, Chairman of the SIPI Board, and presents highlights of the available information about a particular important problem of the environment. Every workbook covers the important facts and concepts of the subject in non-technical language, indicates additional non-technical and technical reading materials and describes one or more case histories where citizens used scientific information to understand the causes and effects of specific public health and environmental hazards.

A list of the workbooks follows, with a short note on contents and authors:

### Air Pollution

This workbook discusses the worsening air pollution situation and how it is related to other environmental problems. Gaps in our knowledge and weaknesses in our current efforts at control are also described. The committee of scientists who prepared the workbook was headed by Allen Nadler, M.D., who is Assistant Clinical Professor of Medicine at Stanford University, and serves as Secretary of SIPI.

### Environmental Cost of Electric Power

How much power do we really need? What is the relation of population growth and growth in energy consumption? How do each affect the environment? What are the costs to the environment and public health of fossil fuel and nuclear fuel power production? What are other ways to produce power and what are their environmental costs? Information on these and other related questions is provided by Dean E. Abrahamson, M.D., Ph.D., Associate Professor of Anatomy and Laboratory Medicine, University of Minnesota, and Vice-Chairman of the Scientists' Institute.

Margaret Mead, President of the Scientists' Institute for Public Information, delivered the Proctor Prize Lecture, "The Changing Significance of Food," at the 134th Annual Meeting of the American Association for the Advancement of Science, held in Boston in December 1969. This lecture was reprinted in the March-April issue of *American Scientist*.

The internationally known anthropologist gave a major speech at the "Exploratory Conference on the Future of Man and Society" at Geneva, Switzerland, which began in late June 1970. This conference was sponsored by the World Council of Churches, and developed largely as a result of the Council's 1969 meeting of the Working Committee on Church and Society. Both Dr. Mead and Walter Bogan, Executive Director of the Scientists' Institute, participated in this 1969 meeting.

Following the Geneva conference, Dr. Mead attended the Delos VIII Symposium of the Athens Center of Ekistics.

### Environmental Education: 1970

In this workbook, faculty and students describe a variety of needs, approaches, and experiences in undergraduate environmental education. A list of courses from a number of colleges and universities is included. Everett M. Hafner, Ph.D., Dean of the School of Natural Science and Mathematics at Hampshire College, headed the committee of three scientists that prepared this workbook. Dr. Hafner is a member of SIPI.

### Environmental Effects of Weapons Technology

Testing, storage and transportation hazards of nuclear, chemical and biological weapons are documented, showing that they affect our environment even if they are not used in war. Michael McClintock, Ph.D., Senior Scientist at the Space Science and Engineering Center of the Uni-

versity of Wisconsin, and four other scientists prepared this workbook. Dr. McClintock is a member of SIPI.

### Hunger

Hunger in an affluent society and in a divided world is described and documented. Some of the proposed solutions to this problem, both local and worldwide, are also discussed. Margaret Mead, Ph.D., Curator of Ethnology Emeritus at the American Museum of Natural History, Adjunct Professor of Anthropology at Columbia University, and President of the Scientists' Institute for Public Information, prepared this workbook.

### Nuclear Explosives in Peacetime

Commercial use of nuclear explosives, underground weapons testing, and the use of nuclear explosives for excavating

Barry Commoner, Chairman of the Scientists' Institute for Public Information, was one of the principal speakers at Northwestern University's "Project Survival" environmental education program January 23, 1970. Dr. Commoner has talked to scores of other audiences since then. These include 15,000 persons attending the Michigan University "Kick-Off for Earth Day" on March 11, and students at seventeen separate campuses, who simultaneously heard him speaking from St. Louis by means of amplified long-distance telephone reception. Chase Manhattan bankers, industrialists at several symposiums on pollution problems, and numerous community groups around the country have also heard him discuss various environmental issues. On Earth Day, April 22, Dr. Commoner gave speeches at Wellesley, Brown, Rhode Island University, and MIT. He was also featured in an extensive article on the environmental crisis in *Time* February 2, 1970, was a panelist on the *Today* show in May, and met with Russian scientists in a Building for Peace program April 28-30.

harbors and canals are described, and the environmental and public health hazards documented. This material is based on reports from the Colorado Committee for Environmental Information and the St. Louis Committee for Environmental Information and was adapted by the workbook editors.

### Pesticides

This is an analysis of current pesticide problems and a discussion of alternatives to sole reliance on chemical control of insects. Donald L. Dahlsten, Ph.D., As-

sociate Professor of Entomology, University of California, Berkeley, and the three members of his workbook committee prepared this workbook. Dr. Dahlsten is a member of SIPI.

### Water Pollution

This workbook includes a discussion of why present machinery for the control of water purity fails to protect our ecosystem. Facts about the various forms of water pollution and proposed methods of action to reverse the present degradation of our waters are presented. George

## Scientists, Citizens, and SIPI: A Short History

The science information movement is entering a new era of growth as the general public awakens to the implications of the impact of technology upon their lives. The sudden great interest in the environmental crisis is the most spectacular example of this new wider awareness. Everywhere citizens and voluntary organizations are asking for the facts about environmental degradation and what can be done about it; government agencies from Congress to town councils are seeking ways to draw on the scientific community for information and advice.

Scientists are responding in growing numbers to the demand for objective information on the environment and other topics of social importance. Many of these experts belong to one of the thirteen science information committees across the country. These groups feel the new pressure for unbiased information and are intensifying their efforts to provide the facts and clarify the issues that concern their fellow citizens.

In turn, these committees, as well as individual scientists and non-scientists, are seeking greater assistance from the national headquarters of the science information movement, the Scientists' Institute for Public Information (SIPI). Since its formation in 1963, the Institute has served as a clearinghouse of ideas and scientific information and also as a source of organizational and financial aid to its affiliated committees. Now SIPI is challenged with a heavier demand for all these services than it has ever faced.

Relationships between scientists and citizens based on the need for scientific

information about controversial issues, were quite uncommon until a few years ago. Scientists generally stayed in their laboratories and classrooms, and citizens generally left them there. How did the change come about? How did the committees and SIPI begin, and what are their activities? Why has their work become so important to the general public?

### The Committees Begin

The harnessing of nuclear energy brought about fundamental social changes. Awe at the might of the new technology of the atom was slowly followed by a recognition of the serious dangers of atomic radiation. Both scientists and informed citizens began to see more clearly the mixed blessings of atomic power.

In 1958, concerned scientists and non-scientists formed the first science information committees, which Margaret Mead, President of the Scientists' Institute for Public Information, has defined as "a new social invention." These committees were organized in several cities spontaneously. They concentrated on providing public information about fallout from the testing of nuclear weapons and about other problems resulting from the use of nuclear energy.

The basic principles of the science information movement were developed by these early committees. Both the scientists and citizens involved agreed that the issues related to the application of nuclear power are social, and do not lie in the realm of science. For example, no scientific evaluation can determine how

C. Berg, Ph.D., who prepared this workbook, is Associate Professor of Radiation Biology and Biophysics at the University of Rochester, and a member of SIPI.

These workbooks are being sold at cost from the SIPI office in New York. The science information committees around the country which are associated with SIPI also have supplies of these workbooks for sale. At present, over 90,000 workbooks have been purchased, and 50 to 75 orders for varying numbers of single copies or sets of workbooks arrive daily at the SIPI office.

to balance the cost of strontium 90 in the bones of children and of iodine 131 in their thyroid against the military benefits of atmospheric nuclear testing. Only the society as a whole can make such decisions.

Yet how is the ordinary citizen, untrained in science, to make intelligent value judgments about the problems of radiation or numerous other social issues created by the impact of science on society? From the beginning, the unique function of the committees has been to share the technical information of its scientists with the public. The committees have presented this information in language clear to the non-scientist. They have facilitated community understanding of the relevant facts and their implications. Furthermore, committee members have developed and presented information with traditional scientific objectivity. They have given attention to divergent views and reported significant controversy over a scientific theory or observation. Committee scientists have kept their presentations of fact free from moral and political judgments, and they have made all information freely available to everyone.

### Committee Activities

This same philosophy of science information work guides the present committees, which continue to be volunteer efforts by academic scientists. These scientists now provide science information on a variety of issues besides the biological effects of radiation.

The present committees differ from each other in size, programs, and composition. Most of the members are natural scientists, but some groups include social scientists. Some committees also include non-scientists as members. Each committee offers all or some of the following services:

1. A speakers' bureau which provides lectures for such community groups as parent-teacher associations, fraternal clubs, religious congregations, chambers of commerce, labor unions, and high school and college students.
2. Presentation of expert testimony before legislative committees.
3. Preparation of articles for publication, and assistance to writers, editors, and producers in the preparation of articles and television and radio programs.
4. Primer courses of information for legislators on a non-partisan basis.
5. Lectures to other scientists on subjects outside their own professional fields.
6. Publication of scientific information in bulletins and newsletters.
7. Adult education courses at universities.
8. Reports of independent study and research done by committee scientists.
9. Development of library facilities and other educational materials for the use of the local community.
10. Technical advice to local citizens' groups working on problems of lead poisoning in children, air pollution, water pollution, and a variety of other issues.

The subjects included in the programs of the committees are numerous. Problems of environmental integrity, such as air and water pollution, pesticides, radiation, and chemical and biological warfare are most common, although some committees have projects on the biological and social aspects of race, population growth, and the use and abuse of drugs. The programs of each committee are determined both by the needs and interests of the community and by the kinds of skills of committee members.

Although the methods and procedures of each committee vary, all committees have mechanisms for strict review of scientific information presented by the committee to the public.

"The scientific community should, on its own initiative, assume an obligation to call to public attention those issues of public policy which relate to science, and to provide for the general public the facts and estimates of the effects of alternative policies, which the citizen must have if he is to participate intelligently in the solution of these problems."  
Report of the American Association for the Advancement of Science Committee on Science in the Promotion of Human Welfare.

Some committees maintain offices and employ professional staffs; others employ part-time administrative help; and in others, scientists perform the administrative chores themselves. Financial support has come from private foundations and directly or indirectly from the Scientists' Institute. In addition, community groups and individual citizens contribute toward the budgets of the committees.

From the very beginning of committee work in 1958, the St. Louis Committee published a magazine describing to non-scientists and scientists alike the latest information on topics in which the committee was involved. Originally titled *Nuclear Information*, the magazine changed its title to *Scientist and Citizen* and then to *Environment* to reflect the present emphasis of committee activities on a variety of environmental issues. *Environment* is now used by all the committees, who in turn often provide information for articles. The magazine has been adopted as an official publication by the Scientists' Institute. *Environment* currently has a circulation of 25,000, including many government officials, scientists, libraries, educational institutions, industrial firms, and a large number of non-scientists. The magazine is supported by grants from the U.S. Public Health Service, the Sears Family Foundation, the Sloan Foundation, the American Conservation Association, and the United Universalist Association, as well as from the Scientists' Institute and community funding in St. Louis. As part of its effort to remain an objective source of scientific information, *Environment* has refused to carry advertising.

But what do committees do? The following overviews of two committee programs of the recent past give some indication of the impact on the community of the science information approach to controversial social issues. Since most committee activities are at present centered around environmental problems, both of the programs cited deal with this

aspect of science information work.

More recent committee activities are described in the *Committee News* section of this *Report*. Detailed discussions of additional committee information projects are reported in the SIPI environmental workbooks, discussed on page 1 of this *Report*.

**The Rochester Committee and Water Pollution.** The first activity of the Rochester Committee for Scientific Information (RCSI) after it broadened its work beyond radiation information was a modest attempt to research and publish the facts about pollution in Irondequoit Creek, which was receiving sewage from suburban communities. Published first by RCSI in its own bulletin, the facts were given much wider publicity in the local press, and were also taken to the people in many talks by RCSI scientists. Investigations of industrial pollution in the Genesee River, the pollution of the city's beaches, and the phosphate problems of Lake Ontario followed. RCSI bulletins gave news leads on such topics to a crusading reporter. The additional publicity led to an investigation of water pollution problems by the League of Women Voters and was the basis for anti-pollution activities by the local Conservation Council. The unpleasant facts uncovered by RCSI were at first highly unpopular with local pollution control agencies. More recently, however, RCSI scientists have been consulted by sanitary engineers on the city's new sewage disposal plant and their testimony has been welcomed at public hearings of the New York Water Resources Commission.

Much more work has been done by the RCSI in the area of water pollution; highlights of their recent activities are given in the *Committee News* section of this *Report*. The importance of the work of this committee was stressed at hearings of the International Joint Commission in Rochester early this year. At these hearings, an IJC commissioner expressed

continued on page 17

## COMMITTEE NEWS

Below are highlights of the work of SIPI's affiliated science information committees during the last fifteen months. These groups have provided information to the public on environmental issues and in some instances on other social issues as well. To best indicate the variety of styles and strategies employed by different committees in approaching a single subject area, reports of committee work have been arranged in the following pages under broad topics. Because of space limitations, the discussions of committee activities are generally brief. In selected cases, however, activities have been more fully reported to indicate the kinds of processes and development involved in committee work.

In addition, a few of the numerous written materials produced

### Air Pollution

Two members of the **Colorado Committee for Environmental Information (CCEI)**, Peter Metzger and Robert H. Williams, recently supplied most of the scientific information included in "The Recommendations of the Colorado Citizens for Clean Air for Air Quality Criteria for the State of Colorado." This document reviewed the major sources of air pollution, made recommendations for state standards, and gave explanations and background information explaining the recommendations. The Colorado Citizens for Clean Air, a local citizens group, presented the 57-page report at public hearings of the National Air Pollution Control Administration October 15, 1969. Recently, Dr. Metzger reported that with the exception of standards for radiation, the standards soon to be adopted by Colorado will be at least as strict as the ones proposed in the report.

If you can eat it, you can breathe it, was the argument of a local alfalfa products company to the Colorado Air Pollution Variance Board. The company had asked that less restrictive standards be applied to dust pollution from its grain loading activities. They argued that since the dust is one-third protein, it would not be as dangerous to health as the carbonaceous dust from power plants, since we eat protein. At the hearing of the Variance Board, Dr. Metzger, president of CCEI, pointed out that the small protein particles commonly found in the

dust were biologically active and therefore far more dangerous to health than inorganic dusts. After the hearing, he produced data from Colorado medical specialists in support of this conclusion. On the basis of this evidence, the variance was denied.

Dr. Raymond Slavin, representing the **Committee for Environmental Information (CEI)** in St. Louis, testified on local air pollution problems before the U.S. Senate Subcommittee on Air and Water Pollution during hearings held October 29, 1969 in St. Louis.

CEI is now compiling an extensive report on St. Louis air pollution. Questions raised in this report include: Did the 1967 Air Quality Act prove effective in reducing air pollution? What do citizens and officials need to know about St. Louis air? Are present air pollution standards sufficient to protect public health? The document has been in preparation since January 1970 and is scheduled for completion and release in the fall. The study began after an inversion in the summer of 1969 which produced a period of heavy pollution. At that time the committee issued a press release stating that normal daily air pollution was the basic problem for research and public action, more so than occasional crises brought on by inversions.

Robert Karsh, outgoing President of CEI, contributed a paper, *Health Hazards of the Automobile*, at the

for the public by committees have been described below. The remaining bulk of such materials is reported more generally. In particular, *Environment* magazine, edited and published since 1958 by the St. Louis Committee for Environmental Information and an official publication of SIPI, publishes detailed articles on a wide variety of environmental topics. Recent articles are discussed here, and the others are listed in the Index provided on request by the St. Louis committee. Also, the SIPI workbooks, written by members of the various committees and produced by SIPI, are briefly referred to in this section. These publications are reviewed in detail beginning on page 1 of this *Report*.

A directory of the SIPI affiliates discussed below is printed on page 20.

National Automobile Conference held in late 1969 at the University of Missouri at Columbia.

Allen Nadler, Secretary of the Scientists' Institute and Vice-Chairman of the **Monterey Bay Area Committee for Environmental Information (Monterey Bay Area CEI)**, represented the committee at three spring conferences on air pollution sponsored by the National Air Pollution Control Administration. Dr. Nadler served as a consultant for the meetings, each of which was held in a different region of the country. Glenn Paulson of the New York Scientists' Committee for Public Information attended two of these meetings, also as a consultant. He and Dr. Nadler were together again during a two-day symposium held during April, 1970 at Sarnia, Ontario in Canada's heavily industrialized Sarnia Valley. The symposium, sponsored by the Sarnia Labor Council, was open to the union members and the public, and featured discussions of heavy metals pollution. Dr. Nadler returned to Canada in May as the keynote speaker at a Canadian Oil, Chemical, and Atomic Workers meeting on pollution problems in Edmonton.

The **Nashville Committee for Scientific Information (NCSI)**, is preparing a report on the availability of low sulfur fuels which could be used by residents of Nashville. The city has an air pollution ordinance which restricts the burning of high sulfur fuels.

David Wilson, Chairman of NCSI, has been asked to serve on the air pollution advisory committee of the Board of Health of Metropolitan Nashville.

A paper on air pollution of the San Francisco Bay area has been prepared for the use of the general public by members of the **Northern California Committee for Environmental Information (NCCCI)**.

NCCCI members have also conducted a survey of several hundred Bay area residents concerning their attitudes toward air pollution problems. Results were tabulated and published in the October issue of the NCCCI newsletter, *ENFO*.

Material on vehicle exhaust and photochemical smog, including information on the emissions of various makes of cars, has been prepared by Larry Caretto, NCCCI member, and is available from the committee office.

The **Scientists' Committee for Public Information (SCPI)** in New York City has recently provided technical data for an unusual public information project of Citizens for Clean Air, a local organization which SCPI helped form several years ago. A New York telephone number has been established (PL 5-3300) so that citizens may call and hear a recorded message giving the previous day's New York City air pollution levels for carbon monoxide, sulfur dioxide,

and particulates. The message includes a comparison between these readings and the standard levels considered safe for public health. SCPI has also provided speakers for this organization throughout the past year.

Some local radio stations and newspapers have recently introduced air pollution reports and have asked advice and guidance from SCPI in preparing announcements.

Glenn Paulson, representing SCPI, delivered detailed testimony to the New York State Air Pollution Control Board at hearings in May 1969. These hearings concerned the proposed geographical classifications and air pollution standards for the New York metropolitan area. The SCPI testimony discusses health effects of air pollution, the basis for setting meaningful standards, and the implications of the state proposals.

William Cruce of SCPI spoke in January 1970 before the American Institute of Architects. His speech, "The Health Implications of Airspace Construction over Highways," presented the little-publicized findings of a 1966 National Air Pollution Control Association study and described in detail air pollution levels inside George Washington Bridge apartments, which are located above a major expressway. SCPI members have been discussing the pollution problems of airspace construction over highways with numerous other agencies and citizens' groups in New York City.

SCPI members recently helped design a high school air pollution project carried out at the Wave Hill Center for Environmental Studies at Riverdale, New York.

Members of SCPI's air pollution subcommittee have been consulted by groups as far away as Boston and Dallas, as well as by associates of Ralph Nader in Washington, D.C. In addition, some members have been working with labor unions, providing information on air pollution inside factories and the relationship of in-plant pollution to general community air pollution.

SCPI scientists took New York City officials for a spring ride on the

Staten Island Ferry. 75 top members of the City of New York Transportation Administration met with the SCPI experts on a ferry April 30 this year and discussed aspects of air pollution.

"Staten Island Disease" was the catch-all name of a variety of recurring respiratory ailments and headaches affecting many citizens living in a large cluster of homes on Staten Island, New York. One unusual feature of this village-like area was the use made of a drained lake bed which the houses surround. Approximately 80 New York City buses were parked there in the evening. When the weather was cold, the buses idled their engines all night, and during warmer periods for as much as two hours early in the morning. Some residents of the area suspected that the exhaust fumes might be causing some of their ailments, and for several years had complained unsuccessfully to local authorities to do something about the buses. However, the **Staten Island Science Information Committee**, assisted by members of the **Scientists' Committee for Public Information** in Manhattan, began informing the citizens about the nature of diesel bus exhaust and the health problems that might be associated with it. As a result of this information, the Citizens Against Bus Exhaust formed in February 1970 and with the continuing technical assistance of the Staten Island committee, were able to effectively present their case to the Department of Air Resources of New York City. This agency in turn placed pressure on the Department of Transportation and the buses were transferred in June to a remote site.

This is the third year the Staten Island committee has operated a pollen station, supplying a pollen count to local citizens. The committee borrowed equipment for this project from the office of the State Botanist in Albany, New York, and set up the station on the roof of New York state facilities located on an exposed rise of ground on Staten Island.

A mean level of 150 parts per million of fluoride was detected in garden lettuce in the Columbia Falls, Montana area. In a study sponsored by the State Board of

Health, the **Western Montana Scientists' Committee for Public Information (Western Montana SCPI)** found widespread fluoride contamination resulting from the operations of the nearby Anaconda Aluminum Company. The committee is now analyzing fluorides in various other Montana counties under a contract with the National Air Pollution Control Administration.

Lettuce is a little heavier than usual when it grows in the East Helena, Montana area. The Western Montana SCPI has found a mean level of 1600 parts per million of lead in the soil of this heavily industrialized area. Members of the committee have been studying lead, cadmium, arsenic and other air pollutants of East Helena for several years, and since 1969 have been funded in such work by federal and state agencies. Some of the findings made by federal and Western Montana SCPI scientists have been published in *Time*, *The New York Times*, and local newspapers. In addition, the committee is preparing its own reports of its investigations for release to the public.

C. C. Gordon of the Western Montana SCPI was a panelist on fluoride pollution at a June 18, 1970 conference in St. Louis sponsored by the National Air Pollution Control Administration. Dr. Gordon was also a consultant at two additional NAPCA conferences held a few months earlier in California and Texas. In addition, he has provided information on air pollution as a regular consultant of SPEC, the Canadian Scientific Pollution and Environmental Control Society.

## Chemical and Biological Warfare

The National Academy of Sciences consulted with the **Colorado Committee for Environmental Information (CCEI)** in May 1969 on problems of disposal of surplus chemical warfare stocks. The N.A.S. report on this subject, "Disposal Hazards of Certain Chemical Warfare Agents and Munitions," was released to the public and the Defense Department in late June, 1969, and cited the aid of the Colorado committee.

CCEI was represented in Washington, D.C., by Michael McClintock at the Gallagher subcommittee hearings in May 1969. Dr. McClintock testified about the hazards of transporting nerve gas. He spoke during the same period to the Denver City Council and a Colorado Senate committee at their hearings on this problem.

During the past year, members of the **Northern California Committee for Environmental Information** subcommittee on chemical and biological warfare (CBW) have given numerous speeches to local groups and participated in symposia at the University of California Medical Center and elsewhere.

A group of Philadelphia scientists helped organize and sponsor a symposium, "Chemical and Biological Warfare: A Dead Issue?" this spring. Among the participants at the April 11, 1970 meeting were Victor Sidel, a physician nationally known for his knowledge of many aspects of chemical and biological weapons; Peter Weiss, a New York lawyer; and other experts, including a medical doctor employed, at the time, at Fort Detrick, Maryland.

The scientists in this group have worked with the New York Scientists' Committee for Public Information and with other SIPI affiliates, and have functioned as an informal science information committee for over a year. The scientists are now discussing plans to organize a permanent committee and have met with Walter Bogan, Executive Director of SIPI.

The chemical and biological warfare subcommittee of the New York **Scientists' Committee for Public Information (SCPI)** organized a Congressional breakfast on the subject of CBW, held June 19, 1969 in the Rayburn Building in Washington, D.C. Sponsors of the breakfast were Congressman Edward Koch (D.-New York), Richard McCarthy (D.-New York) and Senator Gaylord Nelson (D.-Wisconsin). The attendance was 125 persons, including many Congressmen, members of the House and Senate staffs, and members of the press. Three speakers, Matthew Meselson of Harvard, Arthur Galston of Yale, and Joshua Lederberg of Stanford, made presentations on the use of defoliants in

E. W. Pfeiffer, a founding member of the Western Montana Scientists' Committee for Public Information, co-authored three articles on the use and ecological effects of defoliants in Vietnam. Dr. Pfeiffer and Gordon H. Orians, an ecologist from the University of Washington, wrote their articles after a short stay in Vietnam sponsored by the Society for Social Responsibility in Science. The first two reports of their findings were published in two June 1969 issues of *Scientific Research* and were later reprinted in the SIPI Workbook, *Environmental Effects of Weapons Technology*. A third report appeared in the May 1, 1970 issue of *Science*.

Vietnam and on the Geneva Protocol. A SCPI fact sheet on CBW was provided all who attended. In keeping with SCPI's policy of presenting all important views of a scientific issue, several experts on CBW from the Pentagon were repeatedly asked well in advance by participating Congressmen to attend the breakfast and offer testimony, but all refused.

A House resolution was proposed on April 30, 1969 by Congressmen Edward Koch and Richard McCarthy, to establish a study commission for inquiry into the effects of defoliation on Vietnam. The CBW subcommittee of SCPI has been in touch with these Congressmen and others and provided technical information on CBW to them. Material provided by SCPI was included in Congressional testimony given by Congressman Koch on June 16, 1969.

The Fund for New Priorities is using technical information supplied by the CBW subcommittee of SCPI in preparing Congressional conferences on various national issues.

A *CBW Fact Sheet*, prepared by Susan Zolla, chairman of the CBW subcommittee, is available from the SCPI office. Dr. Zolla wrote one section of the SIPI workbook, *Environmental Effects of Weapons Technology*.

"The problem is so well-defined, so neatly-packaged, with both causes and cures known, that if we don't eliminate this social crime, our society deserves all the disasters that have been forecast for it."

René Dubos on lead poisoning, remarks at National Conference on Lead Poisoning in Children, New York, 1969.

## Lead

The city of Minneapolis now has an ordinance prohibiting the use of paint which contains more than one percent of lead. The ordinance also does not allow accumulated paint containing more than one percent of lead on surfaces four feet or less from the floor, or at any height if the paint is blistered or peeling. The Mayor of Minneapolis approved the measure July 15, 1969. Much of the public pressure to enact such a rule was generated by an extensive lead poisoning screening project conducted earlier in 1969. This screening was done through the combined efforts of the **Minnesota Committee for Environmental Information** and the Biomedical Students Committee for Social Responsibility of the University of Minnesota.

This year, a group of scientists in Philadelphia have provided medical and other technical information to local citizens' groups and agencies concerned with the problem of lead poisoning in the city slums. The widespread citizen movement began last November, and has aimed for the establishment of a Health Department program to eradicate lead poisoning. The campaign has finally borne fruit, with the appropriation of \$600,000 by Model Cities for a Health Department proposal that met most community demands.

The main exception was the exclusion of mobile units for surveying children, which was in the original request for \$2,000,000. However, children are being surveyed with blood-lead tests on a door-to-door basis. In addition, all dwellings in the lead belt of Philadelphia will be tested for the presence of harmful levels of lead. Philadelphia is the first city to have such a provision. If such levels are found, the owner will be compelled to remedy the condition.

Members of established science information committees affiliated with SIPI cooperated with the Philadelphia scientists in their information activities. The group is now considering forming a permanent science information committee and has met with Walter Bogan, Executive Director of SIPI.

In May 1969, the **Scientists' Committee for Public Information (SCPI)** in New York published a detailed bulletin on lead poisoning in slum children. The document summarized an earlier meeting assembled by the Buildings Research Advisory Board of the National Academy of Sciences at the request of SCPI and the New York City Health Research Council. This discussion of the problem augments the general report of the National Conference on Lead Poisoning in Children, organized in the early spring of 1969 by SCPI, SIPI, and four other New York City organizations.

In the fall of 1969, several national publications printed articles on the lead crisis taken wholly or partly from information assembled by the New York committee. *Look*, *The New Republic*, *Science*, *The Village Voice*, *Health News* of the New York State Health Department, and others gave wide publicity to basic facts of lead poisoning.

SCPI took the facts about the causes and the cures of the lead crisis to Congress. A Congressional information breakfast, organized by the New York committee, was held on November 12, 1969, in the Rayburn Building. The gathering, co-sponsored by Congressman William F. Ryan of New York and Senator Edward Kennedy of Massachusetts, was addressed by SCPI scientists Edmund O. Rothschild of the Sloan-

Kettering Institute, Joel Buxbaum of the Albert Einstein School of Medicine, and Julian Chisolm of Johns Hopkins. This breakfast was held at the time three bills to remedy the national lead poisoning situation were introduced in the House of Representatives.

SCPI members also gave guidance to a survey of possible lead poisoning cases. This survey was sponsored by Albert Einstein Hospital in New York City and conducted through neighborhood health centers. The SCPI scientists have worked closely with the local health department as well, helping them develop new techniques for diagnosis of lead poisoning. The present New York City Health Services Administration lead project is very similar to the original program written by the Citizens' Committee to End Lead Poisoning, a local group established through the advice and technical assistance of SCPI. In addition, SCPI scientists have periodically discussed problems of lead poisoning with members of the New York City Council and with Congressional delegates.

Governor Nelson Rockefeller of New York recently signed Program Bill #141 which provides several basic measures to prevent lead poisoning in children. The bill contains a ban on leaded paint from use on children's toys and furniture, on window sills, porches, and interior surfaces of buildings. A procedure for the elimination of dangerous paint conditions in dwellings is provided. It also includes notice and demand for the remedy of such conditions, formal abatement proceedings, assessment of penalties, and the appointment of an interim receiver in the event of failure to comply. The lead subcommittee of SCPI provided technical information at earlier testimony before the State Legislative Committee on Public Health, part of which was included in this new bill.

## Pesticides

Some possible hazards of the insecticide DDVP were placed before the public in a press release from the St. Louis **Committee for Environmental Information (CEI)**, in November 1969, and were subsequently discussed by Kevin

Shea, Scientific Director of CEI, on St. Louis television. *Environment* magazine, published by CEI, is now preparing an extensive article on DDVP and other widely used vaporizing insecticides. The magazine has recently published several extensive reports on ecological effects of insecticides used in agriculture.

Robert Risebrough, a scientist at the University of California at Berkeley and member of the **Northern California Committee for Environmental Information**, prepared an article for *Environment* about the industrial chemical, PCB. Dr. Risebrough has done most of the scientific work in this country on the detection of PCB in the environment. The substance is chemically related to DDT. His article, "More Letters in the Wind," was published in the January *Environment*; in mid-April Representative William Ryan of New York called for a mobilization of "all available resources to detail the extent of the [PCB] threat and steps that can be taken to eliminate it." Ryan credited the St. Louis CEI with bringing PCB to his attention and used the *Environment* article in documenting the possible hazard. On the day of Ryan's statement, Monsanto Co., manufacturers of PCB, announced that the company would shortly begin to market a substitute for PCB and would discontinue production of harmful grades of the compound.

Kevin Shea, Scientific Director of the St. Louis committee, presented testimony on side effects of DDT before the Illinois State Interdepartmental Committee on Pesticides in December 1969.

In May 1969, *Environment* magazine published a special issue on mercury as an environmental contaminant, showing that it is widely used as a seed dressing to prevent the development of fungus and that it could prove dangerous to birds, to fish, and to people. In January 1970, three children in New Mexico became seriously ill with mercury poisoning. The source was traced to pork from hogs that had been fed mercury-treated grain. New Mexico Citizens for Clean Air and Water showed the May 1969 issue of *Environment* to local legislators, and soon afterwards David Nor-

vell, Speaker of the New Mexico House of Representatives, called public attention to the magazine's information and introduced a bill to control mercury use. The U.S. Department of Agriculture has now acted to restrict the use of mercury seed dressings.

The Missouri Department of Agriculture announced in late 1969 that it would spray a thousand acres in the St. Louis area with chlordane to control an infestation of Japanese beetles. When public inquiry about this situation was made to CEI, Kevin Shea, Scientific Director, checked for more facts with the State Department of Agriculture. The "infestation" amounted to 24 beetles caught in a few of the 1800 traps that had been set out. Most of the insects were caught near the river and the railroad tracks, indicating that they probably were carried in from east of the Mississippi. Mr. Shea told the press, radio stations, and interested citizens that since Japanese beetles are ordinarily not found in the area, it was not known whether the newcomers would breed there, and that they might die out before the spring. Any beetles that survived could be controlled by milky spore disease, a biological control specifically effective against Japanese beetles. Chlordane, by contrast, is a highly toxic and persistent insecticide that would kill other forms of life and create environmental problems. The publicity given this information aroused public pressure to halt the chlordane program, and there has been no chlordane spraying this year for Japanese beetles.

A fact sheet on types of insecticides and instructions for their home and garden use is being prepared by the **Nashville Committee for Scientific Information**. The committee is also making a study of chlorinated hydrocarbon insecticides in human milk.

How do we dispose of chemical pesticides and used pesticide containers without contaminating the environment or endangering human health? This question has often been put to scientists in the **Northern California Committee for Environmental Information (NCCCI)**, and early this year the NCCCI pesticide subcommittee invited Dr. Don Andres of the State

Department of Public Health in Berkeley to speak on this issue at an open meeting. The extensive discussion that ensued is reported in the March issue of the NCCCI newsletter, *ENFO*.

A preliminary survey of the use of insecticides in the urban environment has been made by the NCCCI pesticide subcommittee and will be expanded when the subcommittee is able to enlist the aid of statisticians. The survey will include information on insecticide use and regulation in California, the role of the University of California in the recommendation of pesticides for urban use, the nature of the University pesticide research, and the development of means to control urban pests.

The linden aphid and the oak moth are the targets of two integrated pest-control programs created by the NCCCI pesticide subcommittee for the city of Berkeley. One program entails the importation of parasites to control the linden aphid. This project is under the direction of Dr. Robert van den Bosch, Chairman of the Division of Biological Control in the Department of Entomology and Parasitology at the University of California at Berkeley. Suppression of the oak moth, another pest, will be attempted by spraying trees with the bacterium, *bacillus thuringiensis*, which produces a toxin deadly to the oak moth. This program is under the direction of Dr. Dudley Pinnock, Assistant Insect Pathologist, Department of Entomology and Parasitology, University of California, Berkeley. These programs have been approved by the City Parks and Recreation Department and are proceeding, although no city funding has yet been provided. The control strategies are designed to provide substitutes for the chemical insecticides now used for the regulation of these pests.

"Garden Pest Clinics" were sponsored by NCCCI early in 1970 at the University of California Gill Tract Experiment Station in Albany. A group of committee scientists answered questions posed by visitors to the clinics on subjects such as pests, weeds, diseases, soils, and natural enemies of plant pests. NCCCI has also

gathered both resource materials and reference lists on a wide variety of environmental approaches to the solution of garden pest problems.

Some mothers who breastfeed their babies have their milk analyzed for DDT content, but the charge for such analysis is usually relatively high. However, the **Western Montana Scientists' Committee for Public Information** is providing this service at no charge to local Montana mothers, who are referred to the committee by their doctors. So far, says C. C. Gordon, director of the project, no mother has been advised to stop breastfeeding her child, as levels have seldom reached even one-half part per million of DDT.

### Population

"Population Control, Scientific and Moral Aspects" was the first of a series of panel discussions on environmental problems sponsored by the **Minnesota Committee for Environmental Information**. The event was held at the Minneapolis Museum of Natural History on March 2, 1970.

The population trends in the Monterey Bay area are being investigated by members of the **Monterey Bay Area Committee for Environmental Information**. The committee hopes to assemble information to help citizens and planners to assess more accurately present and future population patterns in the area. The study is also designed to aid in determining optimum limits of population and energy consumption.

On January 14, 1970, the **Northern California Committee for Environmental Information (NCCCI)** sponsored a public symposium entitled "How Many People Can We Afford: How Many Is Too Many?" The general content of the symposium, which drew an overflow crowd of more than 2500 people, was reported in the March issue of the NCCCI newsletter, *ENFO*.

NCCCI plans to develop projections of population growth in the San Francisco Bay area and to assemble a record of past population changes. The completed document should provide a useful foundation for numerous pro-

jected studies of the Bay area, and set a standard for accuracy and completeness for future studies by developers or public agencies.

Materials on population are being prepared by the population subcommittee of the **Scientists' Committee for Public Information** in New York and will be available later in the year.

### Radiation

Unlocking underground reserves of natural gas with nuclear explosives entails risks of air and underground water contamination by radioactivity. This information was released July 28, 1969 as the central message of a detailed public statement by the **Colorado Committee for Environmental Information (CCEI)**. The scientists urged that an account of the long-term implications of the many nuclear explosions which would follow successful nuclear gas mining experiments in Colorado be made available to the citizens of Colorado. They emphasized that this should be done before the Atomic Energy Commission and private interests sponsoring these experiments proceeded.

In this manner the committee began an eventful campaign of public information on the hazards of nuclear mining for natural gas. The methods used by the committee—such as submitting technical questions concerning nuclear gas exploration to the various institutions sponsoring an impending test, Project Rulison—and the significant and long-range legal, political and environmental effects of both CCEI efforts and the work of citizens' groups who relied upon the committee for scientific expertise have been nationally reported in *The New York Times Magazine*, February 22, 1970; *Commonweal*, March 13, 1970; and *Science*, June 12, 1970. In addition, much of the scientific information produced by the committee on this problem has been published as part of *Nuclear Explosives in Peacetime*, a SIPI workbook.

On May 11, 1969, a fire swept a building at the Dow Chemical Rocky Flats Atomic Energy Commission weapons production facility between Denver and Boulder, Colorado. Atomic Energy Com-

Peter Metzger, President of the Colorado Committee for Environmental Information, was recently appointed Chairman of the Radiological Health Subcommittee of the Colorado Health Planning Council. The appointment was made by Colorado Governor John Love.

mission press releases stated that \$20,000,000 worth of radioactive plutonium was involved and that damage to the facility amounted to an additional \$50,000,000. In view of the great hazards connected with the release of plutonium to the environment, as well as the many questions left unanswered by Dow, the press approached CCEI for information on these issues. The committee prepared a list of questions and submitted them in an open letter to the Governor of Colorado.

In their letter the committee pointed out that a fire of this magnitude would very likely be accompanied by a smoke plume. Since large quantities of plutonium were involved, it would be expected that radioactive plutonium oxide would be carried aloft and deposited downwind. The problem was complicated by the fact that lethal doses of plutonium are very small and plutonium deposited in the environment in this way is very difficult to measure.

Press coverage of the questions raised by CCEI was extensive and public interest in the matter was high. In response to the committee's questions, the Governor requested that top AEC officials be sent from Washington to help provide the answers. These officials met with the Governor and then with the Colorado Committee for Environmental Information. After a long meeting it was agreed that CCEI would submit a formal list of technical questions to the general manager of the local facility. The list was submitted, answers were received, but CCEI scientists were not completely satisfied. They felt that the data supplied by the AEC were inadequate with respect to the extent of the escape of plutonium from the plant and its accumulation in the local environment. CCEI also voiced its doubts about the adequacy of the AEC program for measuring radioactivity at the plant site, and inquired about the amount of radioactivity which es-

caped during normal plant operations. The AEC and Dow Chemical had not previously taken soil samples at the plant and did so only after CCEI asked for soil data.

The committee decided to conduct its own investigations of the extent of radioactive plutonium in the environment, and issued a report in early 1970 saying that traces of radioactive plutonium had been found in soil samples taken as far as seven miles from the plant site. The AEC responded that the small amounts of plutonium found in the soil samples taken by the CCEI scientists posed no danger to workers at the plant or to the public.

The public controversy that the CCEI-AEC exchanges stimulated was reflected in local politics. A bill sponsored by Democratic Lieutenant Governor Mark Hogan sought to establish a State Atomic Energy Commission, to take control of radiation-producing facilities anywhere in the state. Hogan is waging a fight to win the governorship this year and has been outspoken in his criticism of the AEC. Another bill, sponsored by Republican Governor John Love, was more moderate and was a proposal to include federal installations under existing measures for pollution control. A Colorado congressman, Republican Dan Brotzman, said he had asked President Nixon's science adviser for an opinion on the situation at Rocky Flats. Democratic congressman Byron Rogers stated that he was investigating and would discuss the matter with the AEC. On the other hand, Local 15440 of the International Union of Allied and Technical Workers, which represents 1,900 of the 3,200 workers at Rocky Flats, announced their belief that there was "no danger to the public."

Several months later, however, this local reversed their position and charged that hazards existed at the plant. In the last year, CCEI has found 17 cancer victims among Rocky Flats workers.

"Radiation in the Environment, What are the Hazards?" was the title of a panel presented by the Colorado committee as one of the environmental teach-in activities at the University of Colorado at Boulder. The panelists were Chester Richmond, of the Medical Research Branch, Division of Biology and Medicine of the Atomic Energy Commission, Washington, D.C., and Donald Geesaman, of the Biomedical Research Division, Lawrence Radiation Laboratory, University of California at Livermore; Peter Metzger, President of the Colorado Committee, moderated the panel. Both the panelists are experts in the biological effects of plutonium, and were chosen for the panel because they held divergent views of the long-term hazards of inhaled plutonium particles. This was the first time that these differing views had ever received a public airing anywhere. The subject of the panel was particularly timely in light of the plutonium pollution from the Dow Chemical Company factory fire at Rocky Flats, Colorado, and the significance of the Rocky Flats pollution was discussed. This problem, and CCEI's role in providing additional public information about it, is reported in the preceding paragraphs.

During the summer of 1969, the **Committee for Environmental Information (CEI)** in St. Louis prepared a 100-page report on underground testing of nuclear explosives for both military and peaceful purposes. Stimulated by the problems revealed in this detailed report, a national group of concerned citizens, chaired by ex-Senator Gruening, formed "to seek to halt further underground megaton nuclear tests until there has been an objective, in-depth evaluation by an independent group of eminent scientists of all the hazards from such testing, such as the triggering of earthquakes and tidal waves, radiation fallout, and the destruction and despoliation of the ecology." This was the first major effort to bring pressure to bear on the testing program since the Test Ban Treaty was signed in 1963. The group sent copies of the CEI report to all Senators and Congressmen, and distributed it widely in Alaska before the megaton-sized underground test at Amchitka Island. A special joint meeting of Alaskan

and Hawaiian legislators brought Professor Michael Friedlander, Chairman of the Scientific Division of CEI, to Anchorage to present additional testimony at a time when Atomic Energy Commission and Department of Defense representatives argued for the safety of the test. An article based on the CEI report appeared in the July 1969 *Environment*. Material from the report was also used in the SIPI environmental workbook, *Nuclear Explosives in Peacetime*.

**Scientists in the area of Ithaca, New York** have provided information for an active and growing citizens' group concerned with possible effects of a nuclear power plant proposed for the shore of Cayuga Lake. Over the last two years, these scientists have asked basic questions about the operation of the proposed plant and its effects on the lake, and have facilitated better public understanding of the issues involved. Construction of the power station has been indefinitely postponed as a result of the local citizens' effort to ensure that the plant would inflict minimal environmental damage and create no public health hazard.

On December 11, 1969, Alfred W. Eipper of Cornell University's Department of Conservation and one of the local scientists most active in the Cayuga Lake situation, testified before the New York State Senate Standing Committee on Public Utilities. His statement, "Pollution Problems, Resource Policy and the Scientist," discusses the history and lessons of the Cayuga controversy. A revised version of this statement appeared in the July 3, 1970 issue of *Science*. In addition, Dr. Clarence A. Carlson, Jr. of Cornell's Conservation Department has prepared reports on the potential pollution of this slow-flushing lake by radionuclides. These reports and the testimony may be obtained from the SIPI office or from the authors. Members of science information committees affiliated with SIPI cooperated with the Lake Cayuga scientists in their informational work on the pollution problems of the lake. These scientists are now considering the founding of a permanent science information committee and have met with SIPI Executive Director Walter Bogan.

What is "permissible exposure" to ionizing radiation? If state standards governing the release of radioactivity to the environment from nuclear power plants are stricter than those set by the United States Atomic Energy Commission, can the state legally implement its own standards?

Two years of activity by the **Minnesota Committee for Environmental Information (MCEI)** and the Minnesota Pollution Control Agency have been instrumental in focusing recent national attention on these and other questions of the present U.S. nuclear energy program. A detailed account of the Minnesota situation and its national repercussions has been prepared by Dean Abrahamson, Chairman of MCEI and Vice-Chairman of the Scientists' Institute, and was published this spring as part of his SIPI workbook, *Environmental Cost of Electric Power*. Aspects of the controversial activity of the committee and the state agency have been described in numerous popular publications and trade journals, including *Science*, *Business Week*, *Life*, *Nucleonics Week*, and others. In addition, a summary of the scientific information assembled by the Minnesota Committee on the environmental effects of nuclear reactors was published in the March 1969 issue of *Environment*.

In September 1969, scientists from the **Rochester Committee for Scientific Information (RCSI)** met with members of the Rochester Gas and Electric Company to discuss problems of radioactive and thermal wastes from the Robert Ginna Nuclear Power Plant on Lake Ontario near Rochester. The committee issued a press release on October 31, 1969 discussing the safeguards of the power plant, now in operation, and aspects of the location and operation of nuclear power plants in New York state. Preliminary findings indicate that the specific plant under study has been carefully designed to minimize thermal and radioactive pollution. The RCSI warned, however, that development of the future nuclear plants in the area will require a better-informed public and legislature with regard to the problems of nuclear power, so that adequate means of decision-making and regulation may be established in time.

The NBC *First Tuesday* television series began its January 1970 program with a visual adaptation of Sheldon Novick's *Environmental* article on hazards associated with the Atomic Energy Commission's research complex in Hanford, Washington. The article, "Earthquake at Giza," appeared in the January-February issue.

"As New York rapidly feels its way into the area of nuclear power, there is a necessity for equally rapid growth of environmental safeguards." So begins a January 1970 RCSI bulletin. This document discusses the need for study of environmental factors prior to the decision to place a power plant in a particular site, and suggests that ecological factors should weigh heavily in selecting plant sites.

"The Conflict over Nuclear Power, The New York Senate Assumes an Active Role," a February 1970 RCSI bulletin, discusses the trends of the nuclear power industry in New York state and the opinions and responses of citizens, agencies, and lawmakers.

Scientists of the New York **Scientists' Committee for Public Information (SCPI)** have spoken to groups of citizens living in the vicinity of proposed nuclear reactors in New York and New Jersey. The SCPI members have also provided information to interested community groups concerning the controversial 250 kilowatt research and teaching reactor awaiting an operating license at Columbia University.

Sidney Socolar and Glenn Paulson submitted SCPI testimony at hearings of the New York State Senate Committee on Public Utilities. The testimony was a discussion of environmental problems of electric power generation. Dr. Socolar and Edward Friedman presented similar information at a joint public hearing of the Committee on Environmental Protection and the Committee on General Welfare of the New York City Council.

In the spring of 1970, just before the arms limitations talks were to begin, Edward Friedman prepared an hour-long radio program on nuclear weapons for WBAI-FM in New York City. Dr. Friedman is Chairman of the SCPI subcommittee on nuclear weapons.

A panel discussion, "Environmental Radiation Hazards and Nuclear Energy," was sponsored by the **Stanford Committee for Environmental Information (SCEI)** at the Stanford University School of Medicine Friday, February 13, 1970. John W. Farquhar, Chairman of SCEI, organized the panel, which included Nobel Laureate Joshua Lederberg, Daniel B. Luten, lecturer in geography at the University of California at Berkeley, Dean E. Abrahamson, outgoing Chairman of the Minnesota Committee for Environmental Information and Vice-Chairman of SIPI, and John Gofman, professor of medical physics at the University of California.

### Water Pollution

The water pollution subcommittee of the **Monterey Bay Area Committee for Environmental Information** is studying the proposed sewage treatment centers for the area. Their findings will be summarized in a public report now being prepared.

The Monterey Bay Area committee is developing an extensive inventory of data concerning sewage and solid wastes generated by the Monterey Bay area. This information, which will be computerized when adequate funds are found, will be used to determine the present load of sewage and solid wastes and aid planners in assessing ways to handle these wastes in the future.

Fecal bacteria, fish oil, molasses, corrosive chemicals, petroleum wastes, untreated sewage—these are among the substances sometimes discarded in massive quantities into the streams of the West Nashville, Tennessee area. These and other facts on the pollution of local waters were brought to public attention by the **Nashville Committee for Scientific Information (NCSI)** in its February 1970 report. This document, the first issued by the recently formed

committee, gives background information on water pollution, water quality criteria, and public health, and explains the tests that the committee scientists made on the West Nashville streams. Much of the report lists experimental results and observations with date, location, and findings of each of the 41 tests made. The concluding section summarizes the problems indicated by this data and their health and legal implications.

This report was given wide press coverage in the Nashville area, and brought considerable comment from local citizens and officials concerned about Nashville's water pollution. The NCSI is continuing its detailed study of the streams and rivers in the Nashville area, and has released five additional reports of its investigations. A sixth report presents information about a city dump. The committee is also currently investigating sewage disposal in a local reservoir and will soon publish a report on this problem. Yet another NCSI project now underway is a study of pollution of the Duck River by the town of Manchester, Tennessee.

The **Northern California Committee for Environmental Information (NCCCI)** is now preparing a report for the layman on the numerous water pollution problems of the San Francisco Bay Area, both as they exist today and as they are foreseen for the future. The committee is particularly interested in elucidating the facts and implications of the controversial Bay-Delta Plan, a program for Bay area water pollution abatement recently approved by the state legislature. The complete report will be ready for publication during the fall.

NCCCI members are also making a list of the many water treatment,

pumping, and storage facilities in the Bay region, giving their technical characteristics and explaining how they may be visited. A report dealing with new approaches to the control of industrial water pollution is also being prepared.

Is there scientific evidence that phosphates do not cause serious water pollution problems? According to statements made earlier this year in technical publications and in advertisements, there is such evidence. Advertisements also have claimed that proper sewage treatment can clean up the phosphates and prevent water pollution problems. Herman Forest, President of the **Rochester Committee for Scientific Information (RCSI)**, organized a conference of nationally and internationally known experts on problems of lake pollution to elucidate the current scientific knowledge of the role of phosphates in polluting water and the comprehensive problems of watershed management. The conference, held at Geneseo, New York on June 4-5, 1970, resulted in a summary statement from the participants which made it clear that phosphates are a serious contributor to water pollution. The scientists also reported that large amounts of phosphates do not pass through sewage systems at all, and must be removed from washing products if water pollution problems are to be checked.

Herman Forest, President of the RCSI, testified at public water pollution hearings held February 4, 1970 in Rochester. The hearings were sponsored by the International Joint Commission, and were to discuss pollution problems of the international portions of the Great Lakes and the St. Lawrence River. The results of the meeting were described by RCSI in a "Note

On May 19, CBS Television presented the National Environment Test, a series of short explanations of environmental problems, each introduced by a question. Technical background and advice in the preparation of the program was given by members of the New York Scientists' Committee for Public Information. *Environment* magazine, edited and published by the St. Louis Committee for Environmental Information and an official publication of SIPI, was the main source of materials used by the New York committee in its consultations with the CBS staff.

to Members" which reported the role which RCSI played in the discussion of the phosphate problem of the international waters. Later in the hearings, Dr. Forest presented the Commissioner with his manuscript, "Revelle in Rochester, The Education of a Community," to document five years of Rochester's response to problems of water pollution and other environmental issues. He also stressed the need for science advisory boards at every decision-making level of government and cited the work of RCSI, the Committee to Save Cayuga Lake, and the New York State Health Commissioner's Advisory Committee on Algae as prototypes. "The Commission was told that facts would not resolve complex questions, but that subjective judgment was needed as to whether chances should be taken with the environment," reports Forest. "Thus the need for scientific advisory groups [to clarify the issues requiring such judgment] was underscored."

RCSI has published fourteen bulletins in the last year reporting a variety of local water pollution problems which have been investigated by RCSI scientists. For example, "Eutrophication of Brockport Bay (Lake Ontario): Nutrients from Brockport" reports how certain local streams are polluted both by undisinfected sewage from septic tanks and nitrate and phosphate discharged from secondary sewage treatment plants. The RCSI scientists described an alternative method for disposing of sewage which would prevent the impending serious damage to the water quality of bays which receive these streams. This bulletin was published in May 1969; on June 25, the Brockport-Hamlin sewer district held a referendum on the issue of joining or rejecting a regional treatment program of the kind discussed in the RCSI bulletin. Local voters approved the program by a narrow margin at a time when school budgets and bond issues were usually being defeated.

Other examples of the several RCSI bulletins published this year are two reports on phosphates in washing products. The first appeared in February 1970, and described the results of tests for phosphates made by RCSI scien-

tists in a program aided by a grade-school science class. The author of this bulletin, Olga Berg, received hundreds of phone calls from Rochester housewives about this study. Not long after, laboratory tests by RCSI scientists showed that the method used in the fall tests, recommended by the American Public Health Association-American Waterworks Association Handbook, underestimated the phosphate content of some products. Further tests were done by improved methods, and a new list was published as an April 1970 bulletin. This list had the novel feature of showing the actual grams of phosphate in the wash load recommended for each product by the manufacturer, instead of the percentage of phosphate in a fixed weight or volume. The RCSI later discovered these results, reprinted without change or credit, in a pamphlet of the United States Department of Agriculture Cooperative Extension Service at Cornell University.

A final sample of RCSI's numerous recent bulletins on water pollution is "Combined Sewers—A Major Flaw in Local Pollution Abatement Plans," published by RCSI in May 1970. This bulletin discusses the pollution of the Genesee River by Rochester's combined storm and sanitary sewage system and reports the possibilities of cleaning the river. The plans for the cleanup were based on a state program which offered the city matching funds for sewer construction. The whole program was jeopardized when the state refused to pay for work on combined sewer overflows. The League of Women Voters, with technical data from RCSI, helped county officials rescue this program. The effort succeeded. New York State ruled in June that it would pay the city of Rochester for its share of sewer construction.

The water pollution subcommittee of the **Scientists' Committee for Public Information (SCPI)** in New York has prepared a combined outline, fact sheet, and reading list useful to speakers.

The same SCPI subcommittee provided technical information included in hearings held by the U.S. Congress, Committee on Harbors and Rivers, at Sandy Hook, New Jersey, February 23, 1970. The hearings concerned sludge

dumping near Ambrose Light, off the New York coast. These SCPI members also made three recent TV appearances on New York City Spanish-speaking and English-speaking stations to discuss basic facts and problems of water pollution.

Russel Hulett, Vice-Chairman of the **Stanford Committee for Environmental Information (SCEI)** has prepared a critique of the California Water Plan, a controversial state program to divert waters from the rivers of northern California to southern California. Dr. Hulett's report discusses the possible environmental effects of this program.

"Water Quality of San Francisco Bay" has been prepared by Dale Hattis of SCEI and is available from the committee. The report examines several water pollution problems of the Bay.

How much mercury is in fish living at the headwaters of the Columbia River? Scientists of the **Western Montana Scientists' Committee for Public Information (Western Montana SCPI)** have been gathering data on fish in these waters to answer this question. The Montana Fish and Game Department, sponsor of the study, has asked both the Western Montana SCPI and scientists from the U.S. Food and Drug Administration to analyze the mercury levels in the river fish. The double-checked information has been published by the state agency in periodic reports since the investigation began last fall. Western Montana SCPI members report that while mercury levels are not nearly as high as in certain heavily polluted waters in other parts of the country, mercury does pose a threat to aspects of the river ecosystem.

### Additional Issues

Dr. Malcolm Peterson, representing the **Committee for Environmental Information (CEI)** in St. Louis, presented testimony before the Joint Committee for Atomic Energy Hearings on "Environmental Aspects of Producing Electric Power," January 29, 1970. This testimony was later adapted for use in the March issue of *Environment*, an official publication of

SIPI edited and published by CEI. Sections of the testimony were also published in the SIPI workbook, *Environmental Cost of Electric Power*.

The Environmental Protection Act of 1970, which was approved by the Michigan legislature and signed by the governor in July, owes its creation to cooperative efforts of the **Michigan Committee for Environmental Information (Michigan CEI)** and the West Michigan Environmental Action Council, a local community group. Through the technical assistance of the committee, the council organized around this issue and underwrote the drafting of the landmark legislation by Professor Joseph L. Sax of the University of Michigan Law School. The bill enables citizens and agencies to go to court in cases where damage to the environment is threatened or in process. The Act is now being used as a model for similar legislation in several other states and by the U.S. Congress.

Robert Burnap, Executive Secretary of the Michigan committee, and other committee members also assisted the council in its response to a six-agency plan for the Grand River Basin, developed chiefly by the U.S. Army Corps of Engineers. During a number of discussions and hearings, the council questioned the building of dams for recreational and pollution-dilution purposes. The citizens' group also suggested greater emphasis on upstream water control and downstream flood-plain reserves, along with a pollution clean-up to make the river itself useful for recreation.

"The Property Tax and Its Relation to Environmental Degradation" will be the title of a bulletin planned by the Michigan committee for fall publication.

What would be the possible environmental effects of smelters in a Minnesota wilderness? The **Minnesota Committee for Environmental Information (MCEI)** has been investigating this question for the last few months, and will soon release a report of their findings and conclusions. This document is being prepared to increase public awareness of the possible environmental con-

sequences of a proposed group of copper and nickel smelters in remote areas of the state.

What can the citizen do if a public agency refuses to discharge one of its official duties? The Minnesota committee and the Sierra Club brought the Minnesota Pollution Control Agency and the Minnesota Department of Conservation to trial September 19, 1969 for failure to hold public hearings on whether the Reserve Mining Company, which dumps 60,000 long tons of taconite waste into Lake Superior every day, was violating its permits from the two agencies for water use and waste disposal. Investigations of the mining company's waste disposal practices by the U.S. Department of the Interior in May 1969 had indicated that at least one of the conditions under which the Minnesota permits had been issued was being violated. Both of these permits are subject by law to revocation for breach of their conditions. A public hearing on charges specifying the alleged violations is required before such revocation can occur. However, the two Minnesota agencies who issued the permits to the mining company refused to consider the federal studies which indicated a possible violation and would not hold the required public hearings to investigate this charge.

At this point, the writ of mandamus, an old legal process, served the citizens of Minnesota well. Mandamus can compel the exercise of official discretion, as the following legal encyclopedia definition indicates:

"A public officer is in duty bound to exercise the judgment or discretion which is reposed in him by law. If he fails or refuses to do so, and does not act upon the subject or pass upon the question on which such judgment or discretion is to be exercised, then the writ of mandamus may be used to enforce obedience to the law. In other words, when, in matters involving discretion, the respondent refuses to act at all, mandamus may issue to move him to action and to exercise his discretion in the matter." (34 American Jurisprudence, *Mandamus*, Sec. 67.)

The MCEI and the Sierra Club emphasized that they did not

claim that the permits were being violated, only that there was a distinct possibility that violations were occurring, and that it was for the agencies to exercise their vested discretionary function to determine whether or not such violations existed.

The state agencies responded by challenging this reasoning as legally insufficient and moved to dismiss the case. However, the court denied the state's motion, ruling, in effect, that if the facts alleged in the petition were proven true, a hearing must be held by the agencies as required in the permits.

In his decision denying the state's motion, Hennepin County District Judge Donald T. Barbeau said, in part:

"Plaintiffs are not asking this court to decide whether or not Reserve Mining Company is in violation of the permits, they are asking the defendants to decide that question. And it is clear from the allegations of the petition and from the law that public officials have a duty to enforce the conditions of the permits they have issued and to act where there is substantial evidence tending to show that such permits are being violated. *State ex rel Banning v. Berry*, 3 Minn. (Gil.) 190.

"Finally, the defendants argue that if a writ of mandamus is granted in this case a dangerous precedent will be set which will open the 'proverbial floodgates of litigation' to everybody who wants to enforce the anti-pollution laws. Defendants contend that the State agencies must have, like a police officer who picks out one of a number of traffic law violators to arrest, the discretion to set their own priorities for prosecution and decide on the allocation of their own limited resources for those purposes. Otherwise, defendants argue, every cottage owner who is financially able will file suit for a writ of mandamus to clean up his lake first.

"While the Court doubts that such a flood of legal actions will ensue, the obvious answer to the argument is that this is a court of law, and it is bound to apply the facts to the law. So, if a proper case for mandamus is presented, the writ must issue. A thousand violations of the law do not excuse

a single violation of the law.

"If environmental quality is now of such major concern that the public will demand, and will sue for, strict enforcement of anti-pollution laws, the Court views that as a salutary development. The grim warnings of the ecologists that if we continue raping the land, befouling the water, and polluting the air, mankind itself will surely perish are barren admonitions unless they can be fortified by legal sanctions. Any lessening in the legal duties imposed upon public bodies or officials must come from the legislature."

A detailed summary of this case was published by the Minnesota committee in April 1970. Information on subsequent events is also available from Robert Share, Vice-President of MCEI, the lawyer whose work was responsible for the mandamus proceedings.

A general statement of the environmental problems which the San Francisco Bay area faces now and will likely face in the future is being compiled by the **Northern California Committee for Environmental Information (NCCCI)**. Each subcommittee is preparing a list of the most critical environmental issues, and information is being sought from other subject areas, such as transportation, radiation, and thermal pollution, in which there are currently no NCCCI subcommittees. This statement will have two functions, reports NCCCI's newsletter, *ENFO*. One is to provide a concise picture of problems in the Bay area. Many requests for such an overview come to NCCCI. The second function will be the greater coordination of the NCCCI subcommittees, to help provide an integrated, multiple view of environmental problems requiring such an approach.

The **Rochester Committee for Scientific Information (RCSI)** published an August 1969 bulletin, "Deep Well Disposal." The problems of deep well disposal of industrial wastes are outlined in this bulletin.

Cyclamates in diet foods are listed in a September 1969 RCSI bulletin. The extensive list was prepared as "a shopper's guide for mothers who want to ration the amount of cyclamate eaten by their families

"Science for the Citizen" is the title given a series of adult education courses co-sponsored by the Scientists' Committee for Public Information (SCPI) in New York and the New School for Social Research. These courses, which range from modern physics to human behavior, are supported by a grant from the National Science Foundation. Curtis Williams, a member of both SCPI and the Scientists' Institute, directs this project, which draws upon the expertise of SCPI and SIPI members, particularly in the presentation of the core course, "Science and Public Policy."

according to limits suggested by the U.S. Food and Drug Administration." This was a follow-up of an earlier September RCSI bulletin, "Possible Hazard from Cyclamates in Diet Foods." This heavily documented report examined in detail inadequacies of tests upon which the original registration of cyclamates was based, and gives the results of later research. Consumers were informed of the possible hazards of eating cyclamate-containing foods. This warning was published a month before the Health, Education, and Welfare ban on cyclamates.

The March 1970 RCSI bulletin, "Rural Zoning in Western New York: Introductory Report and Case Study of Town of Avon," reviews zoning problems in Avon, New York. This community is in the path of metropolitan expansion. The bulletin describes the issues which require community discussion, and describes ecologically sound ways to use the town's land, including designating locations for industry.

Only six weeks after this bulletin appeared, some of the possibilities the RCSI had discussed became real when a manufacturer of prefabricated homes applied for a zoning variance to legalize storage in a unique natural area of Genesee River oxbow lakes. Before the variance decision was made, RCSI scientists published information on this particular problem of land use in Avon in their May bulletin, "Industrial Expansion Without Ecological Protection." Not long after, the variance was granted, but a narrow buffer zone was specified around the oxbows.

A new subcommittee was formed

in October 1969 by members of the **Scientists' Committee for Public Information (SCPI)** in New York. In May 1970, this subcommittee on drug use and drug abuse presented shortened versions of talks on various drugs before SCPI Board members and other interested members, who were invited to criticize and judge the talks for their accuracy and suitability in future presentations to the lay public. Five drug groups were discussed in terms of their history, effects, symptoms, treatment, and the state of present scientific and medical knowledge. The talks were considered excellent and are now being given to interested groups. Written materials on each topic are also being prepared.

The subcommittee on the biology of race of SCPI has prepared materials on race which have been adopted for use in several local junior high schools.

### Additional Activities

Speakers from the **Committee for Environmental Information (CEI)** in St. Louis have filled 238 engagements over the past fifteen months. Committee members have generally served on panels or given talks in the St. Louis area. However, some have also gone to Colorado, Ohio, Kentucky, Tennessee, and other states to appear at local, state, or regional meetings on particular environmental topics. In addition, members of the committee have frequently been invited to appear on St. Louis radio and television, where they have presented environmental news of community interest or answered telephoned questions of the media audience.

CEI helped organize and coordinate the teach-in activities at Washington University and for the entire city of St. Louis during Earth Week in April. The committee role included the organization of seventeen workshops on a variety of environmental issues, which were held at Washington University April 25. These workshops, which met for a combined 40 sessions, were attended by an estimated 1200 people.

A county-wide environmental education program has been a project in which the **Michigan Committee for Environmental Information** has assisted the West Michigan Environmental Action Council. Science teacher training, curriculum development, and training in finding and analyzing local environmental problems are among the programs now being developed.

The **Minnesota Committee for Environmental Information** is assisting in the organization of the Environmental Library of Minnesota to be housed in a large room of the Minneapolis Public Library. This will provide the public with a working library emphasizing current and local environmental problems. The materials will be classified for ready retrieval and open for use by the community. Funds to run the library are now being raised by the committee members.

In the last fifteen months, the Minnesota committee has supplied speakers for 247 occasions, both in the Minneapolis area and around the country.

During Earth Week, members of the **Monterey Bay Area Committee for Environmental Information (Monterey Bay Area CEI)** provided speeches and consultation for the teach-in activities of three local schools, Hartnell College, Monterey Peninsula College, and Cabrillo College. In addition, committee members arranged that the Hopkins Marine Biology Station of Stanford University be open to the public. The Marine Station scientists, many of whom are members of the Monterey Bay Area CEI, gave explanations of how marine studies are carried out and described the station's on-going investigation of the



effects of human activity on the ocean environment.

Allen Nadler, Secretary of the Scientists' Institute and Vice-Chairman of the Monterey Bay Area CEI, served as a consultant to the San Diego County schools and helped them plan new curricula on environmental subjects.

A joint meeting of the **Northern California Committee for Environmental Information (NCCEI)** and the **Stanford Committee for Environmental Information** was held May 19, 1970 to assess mutual resources and exchange information. Each committee reviewed its methods of operation, available printed materials, lists of speakers, and consultants.

The Speakers' Bureau of the NCCEI has been supplying appropriate speakers to the many groups who seek them. In April alone, committee members gave 107 speeches.

*ENFO* is the name of the NCCEI newsletter, and William Jordan, a committee member, is the new editor. The monthly publication is available to the public, and reports the various activities of the committee. In addition, *ENFO* provides a detailed calendar of local events in the Bay area having some relation to environmental issues.

Members of the NCCEI have been gathering information on the increasing number of civic groups concerned with problems of the environment, in order to better provide information to the public and to the groups themselves about who is doing what. In this way, NCCEI serves as an information center for increased public knowledge about the many Bay area groups. In keeping with the principles of the science information movement, the committee does not endorse any of these organizations.

The **Rochester Committee for Scientific Information (RCSI)** was one of six civic groups that organized and sponsored the "Now, Not Tomorrow" conference held April 18, 1970. The meeting was designed as a report to the community of its progress and needs in dealing with local environmental problems. Lamont Cole,

internationally known ecologist, was the keynote speaker of the conference. Three panels were featured, *The Air, The Land, and The Water of Monroe County*. Panelists represented local industries, county, state, and federal agencies responsible for local pollution control, conservationists, and scientists, including members of RCSI.

Because of the widespread public interest in this event, conference organizers are considering a plan to reconvene the meeting each year, and provide for the community an annual assessment of what has (or has not) been done to confront various types of environmental issues.

RCSI scientists gave 123 speeches to various local, regional, and national groups during the last year.

The scientists of the Rochester committee have made frequent investigations into a variety of local environmental problems, and for several years have published their findings in RCSI bulletins. This means of bringing scientific information to the public recently has been used as a model for designing a community-centered, inter-disciplinary course for university students. Entitled *Environmental Studies of Monroe County*, it was introduced by student request at the University of Rochester in the first term of the 1969-70 academic year by George Berg, past President of RCSI. "The course is concerned with the problems of the community, and science is a tool which the students are encouraged to use from the outset in the most advanced and effective way," states Dr. Berg in his detailed article on the experimental course in the SIPI workbook, *Environmental Education, 1970*. Students in the first session of the course selected their areas of interest, and then used the resources of the library, the laboratory, faculty members, and members of local and state regulatory agencies to investigate the particular problems chosen and to gather information for project reports.

The initial drafts of the project reports were edited for scientific accuracy, method, and clear communication. After revision, students presented their reports at public seminars attended by faculty members and outside

guests, including county officials and industrial engineers concerned with pollution control. Finally each student was asked to prepare a summary-bulletin in the form of a press release to inform the public of the results of his project. Information from these reports of importance to the people of Monroe County is being issued in some of the bulletins of the Rochester Committee.

Dr. Berg's course has stimulated student-community activities of various sorts. His students formed a group, *Citizens for Environmental Education*, while the course was in progress. The group became the focus of environmental action on the campus, distributed literature on environmental subjects, maintained contact with agency personnel and community leaders, and in general helped maintain community interest in problems of the environment. This group also organized most of the environmental teach-in activities on the campus of the University of Rochester.

22,500 people heard speakers from the New York **Scientists' Committee for Public Information** from May 1969, to May 1970, according to the annual report of the New York committee. SCPI's Speakers' Bureau compiled this audience statistic from records of 128 speeches on many different environmental and health topics given by SCPI scientists during the twelve-month period. In addition, SCPI members have frequently appeared on the New York mass media, and they present an hour-long radio program, "Scientists Speak Out" on WBAI-FM each month.

72 talks on a variety of environmental topics have been given by members of the **Stanford Committee for Environmental Information (SCEI)** since April.

SCEI helped organize activities for the Stanford University Environmental Teach-in last April 1970, and served as a source of information for teach-in programs.

SCEI has begun initial work on a detailed report of energy resources in America.

A two-month community information program, staffed by stu-

dents, is now operating from a storefront in Staten Island. The students were organized by the **Staten Island Science Information Committee** to investigate community environmental problems, assemble information, and produce materials for community use. The program is supported by the Staten Island Institute of Arts and Sciences and by Urban Core, a city youth program, and is seeking funds to continue its work past the summer.

The National Science Foundation has recently awarded \$49,550 to the **Western Montana Scientists' Committee for Public Information (Western Montana SCPI)** for "A Project to Inform the Citizens of Montana on the Scientific Aspects of Environmental Pollution." Among the educational projects already underway are two ten-week lecture series on environmental subjects available without charge to the public. In addition, the committee is preparing a film on pollution in Montana. The library of the Western Montana SCPI already has six movies on environmental degradation, over 14,000 color slides showing a wide variety of natural subjects and pollution problems, as well as 3600 articles on environmental subjects. The NSF grant will aid in the expansion of these widely used resources, and will be used to support other educational activities of the committee as well.

Scientists in the Western Montana SCPI have given 70 speeches to various groups in the local area since last fall, when the Speakers' Bureau of the committee was organized.

New relationships between lawyers and scientists are being worked out as environmental issues become a matter of their common concern and activity. C. C. Gordon, a member of the Western Montana SCPI, has been giving talks at law schools in various parts of the country explaining how lawyers can most effectively use scientific information in court cases involving environmental problems. In addition, Dr. Gordon has been seeking opinions and information from the lawyers he has met on these trips, and has brought other scientists into this informal dialogue between the professions.

"Outside his laboratory, [the scientist's] task is to educate us in what goes on inside it, and to give it a meaning for us. In a world in which statesmen as much as voters are ignorant of the simplest implications in science, this is a formidable responsibility... [the scientist] has no other choice today but patiently to become a teacher, in a world in which distrust and prejudice are free... there is no alternative to an informed public opinion; and that can exist only where scientists speak to voters, and voters accept their responsibility, which is to listen, to weigh, and then to make their own choice."

J. Bronowski

## History

cont. from p. 6

amazement that Rochester had made such great progress in water pollution control on its own initiative. In response, former New York State Senator Frank Van Lare, Chairman of the local Pure Water Agency, noted RCSI's science information work in his credits for the achievement.

**The Colorado Committee and Nerve Gas.** The Colorado Committee for Environmental Information came into existence when several Colorado scientists became concerned about the storage of highly toxic nerve gas near Denver. The scientists learned that one of the nerve gas agents involved in the death of 6400 sheep at Dugway, Utah, in March 1968 was also stored in large quantities at the Rocky Mountain Arsenal. They issued a detailed memorandum August 15, 1968, using information from the Utah incident to estimate the problems that would occur in the Denver area if some of the poisonous gas escaped. The memorandum pointed out that the storage area of the gas was beneath regular air routes to and from the nearby Denver airport, and that either a plane crash or an earthquake could release the gas into the atmosphere. A week after this statement was issued, the Army announced that they would remove the gas, although they did not disclose any other details about this plan at the time.

Subsequently, a nationwide controversy occurred over the dangers involved in transporting these and other hazardous materials, and the possible effects in the Atlantic Ocean if the poisons were dumped there. Committee scientists gave testimony to national, state, and local groups about this transportation problem. They also cooperated with the National Academy of Sciences as the Academy prepared its report, "Disposal Hazards of Certain Chemical Warfare Agents and Munitions." The Academy report recommended on-site de-toxification and destruction of the chemical

warfare materials in question, and stated that this was by far the most acceptable disposal method.

Over two years have passed since the public was alerted by the Colorado committee scientists to the dangerous situation at the arsenal. One year has passed since the National Academy report. At least one lawsuit has been filed by a local group, Citizens of Colorado, against Defense Secretary Laird, seeking removal of the chemical warfare agents stored at the arsenal. However at this time the Army has not yet completed preparations for the on-site destruction of the nerve gas.

The Colorado committee remains involved in the local problems of nerve gas disposal, but has also expanded its activities to include various radiation dangers connected with the nuclear industry in Colorado. Their most recent information projects are discussed in this *Report* under *Committee News*.

## The Institute Begins

Before 1963, the committees focused their science information activities on a single topic, the biological effects of radiation. These pioneering groups became some of the main reliable sources of information about such effects. Public and scientific response to the unsettling facts about radiation revealed by the committees and other organizations of concerned scientists were powerful political factors in paving the way for the 1963 Limited Test Ban Treaty, which banned nuclear testing from the atmosphere by all nations which signed the treaty.

At the time the treaty went into effect in 1963, there were 23 committees, many of them *ad hoc* groups with no office, no staff, and limited financial resources. The committees recognized the need for a national body, which would coordinate their work, provide a clearinghouse for information and a means of communication between the groups. Such a body

would also be able to find funding for existing committees and to work with scientists interested in organizing new groups. The committees also wanted to expand their programs beyond radiation information, and looked to a national organization for direction and guidance.

More basic than any of these considerations, however, was the new mood of society. Among both scientists and non-scientists the realization was growing that the power and dangers of nuclear technology are only the most dramatic examples of the effects of modern science on society, that the many other technologies which man now wields on a massive scale also bear within them a potential for great destructiveness. Scientists were beginning to see that they not only have a duty to inform their communities about the numerous effects of science on modern life, but they must inform actively and not wait until someone thinks of an important question to ask them.

Motivated by these concerns and the practical needs of the existing information movement, over 100 scientists from the various committees met in New York in February 1963 and founded the Scientists' Institute for Public Information. The Institute was established as a non-profit, educational corporation, to seek out, inform, and enlist scientists of all disciplines in public information programs. The principles of objectivity, clarity, and free availability of information developed by the early committees were adopted by the Institute. The extensive proceedings from this founding conference are available from the SIPI office in New York.

## Institute Activities

Following the Limited Test Ban Treaty, public interest in radioactive fallout dropped, and those committees which had not become firmly established with some financing and staff to provide continuity gradually dissolved. However, with the assistance of grants from the Sloan Foundation and the National Science Foundation, SIPI was able to provide assistance to the more viable groups and to reorient them toward a broader concern with problems of environmental contamination.

The Institute and its affiliates have continued their emphasis on environmental information activities to the present time. However, other social issues have re-

ceived attention. In 1966, SIPI, the American Association for the Advancement of Science, and other scientific groups sponsored a conference, "Science and the Concept of Race." The scientific papers presented at that meeting were edited with the assistance of the Institute and published by Columbia University Press. A few of the committees affiliated with SIPI have begun science information work on the biology of race and other topics not directly related to environmental degradation. In the future, the experiences of SIPI and its committees with environmental problems can serve as a base for more science information activities on a variety of controversial social issues.

**Organizing Committees.** After its early work of aiding committees to expand their science information activities to include several environmental areas, SIPI helped interested scientists form new groups in their communities. With active organizational work by Walter Bogan, now Executive Director of SIPI, eleven active and growing committees have been formed around environmental and other problems important to the local regions.

A growing number of scientists are accepting the responsibility to keep non-scientists informed on vital issues. Interest in organizing additional science information groups has been expressed by scientists in 14 other communities and some of these scientists have already held meetings with Mr. Bogan. Past experience suggests that in certain cases this interest will be too limited to provide the basis for a viable committee. In other cases the work of organization will go slowly. But some of these communities should eventually have organized committees. A few groups have already begun functioning informally as science information committees and have used the resources of SIPI and its affiliates in pursuing their work. The programs of two of these informal committees, one in Philadelphia, Pennsylvania, and one in Ithaca, New York, are mentioned in the *Committee News* section of this *Report*.

**Sponsoring Workshops.** SIPI not only gives guidance in the organization and early operation of new committees, but also provides ways for all its affiliated groups to coordinate their efforts and more effectively to explore old and new issues of social concern. One of the

The Scientists' Institute for Public Information has awarded grants for youth education activities to three affiliated groups, the Minnesota Committee for Environmental Information, the Western Montana Scientists' Committee for Public Information, and the Northern California Committee for Environmental Information. Each of these three committees has received \$5000, which was made possible by a grant to SIPI from the Sloan Foundation.

These committees have already worked with teachers and students in their local areas in a mutual effort to develop useful and practical curriculum materials and visual aids about local and national environmental problems. The present grants will allow the committees and the schools to enlarge this relationship. Committee members will continue to rely on the comments and responses from the classroom to guide them as they find additional ways to involve students in substantive discussions of pollution problems.

methods SIPI uses to promote such coordination is organizing conferences and workshops, which bring together representatives from its affiliates. At these meetings, local groups share their experiences and discuss their projects. SIPI has found that such meetings provide cross-fertilization, since each committee develops its own particular approach to an environmental issue. An idea developed by one group often evolves in a new way in the different context provided by another group. Local autonomy within the guidelines of science information principles permit each committee to employ a creative approach adapted to its local situation. SIPI does not plan the programs of any group. Each committee decides whether to act and what approach to use in fostering community understanding of some issue of public concern.

An example of what has evolved from such SIPI-sponsored meetings is the participation of the Institute and several of its affiliates in bringing public attention and activity to bear on problems of the urban environment.

Lead poisoning of children in city slums was first brought to the notice of the Institute and its affiliates during the course of a conference, "The Duty of Science in the Ecological Crisis." This meeting, held in New York in May 1967 was sponsored by SIPI and funded by the National Science Foundation. A representative of the Chicago Science Information Speakers' Bureau referred to the participation of his group in a systematic community canvas to detect lead poisoning in pre-school children. The committee analyzed the urine samples collected in the survey. The number of cases of lead poisoning they found convinced the

city of Chicago that action was necessary. A city medical center for diagnosis and treatment of leadpoisoned children was begun less than a year after the combined citizen-sponsored testing program and the diagnostic work of the committee. The Board of Health has continued the testing program.

Representatives of the Rochester Committee for Scientific Information (RCSI) who attended the SIPI meeting recognized that this issue would give them an opportunity to bring the science information approach to bear upon problems of the urban slums. Beginning their research into the lead problems of Rochester, RCSI immediately uncovered a two-year old study which had never been acted upon by the local county health department. This study confirmed the fears of RCSI members that childhood lead poisoning was a significant health problem in Rochester slums. RCSI then updated the old report with current case studies of affected children and with results of a new survey of the incidence of lead-based paint in local slum dwellings. When the committee published these findings the local Urban League responded by participating in a substantial research and public education campaign. Teenagers from the Urban League collected paint samples from inner city homes, finding hazardous lead-based paint in 22 of 59 households sampled. The combined efforts of these organizations so spotlighted the problem that the previously indifferent city government instituted routine tests for lead as part of its city building inspection. Urine analyses were begun on area children, and the public education campaign of the Urban League was continued.

The experience of the Chicago and

Rochester groups convinced SIPI that lead poisoning was only one of several urban problems which citizens could not deal with effectively because they lacked information. The Institute saw such problems as a new, important focus of the science information movement. To bring the urban situation to the attention of its committees and to assess the nature and degree of certain urban problems in more detail, SIPI organized a workshop, "Environmental Pollution in the Inner City." With funding from the National Science Foundation, SIPI brought committee members from around the country to St. Louis. Three problems were discussed in detail: lead poisoning, rat control, and noise. Over the two-day period of the conference, the committee scientists reviewed the nature of these problems and many approaches to solving them. In particular, the paper on rat control, by David Davis, presented important new concepts about the reduction of rat populations. Dr. Davis' report is available from the SIPI office in New York.

The scientists attending this SIPI workshop returned to their communities with a sense that science information work had a wider area than before in which to foster public understanding of environmental problems.

After the SIPI workshop, *Environment* magazine (then called *Scientist and Citizen*) devoted an entire issue to the lead poisoning problem. This "lead issue" was introduced by a statement of the SIPI Executive Board giving an overview of the lead problem and urging scientists everywhere to bring clear and non-technical information on lead poisoning to their communities. The St. Louis publication covered several aspects of childhood lead poisoning, and also delved into the related problems of long-term, low-level lead contamination of the modern environment. The magazine presented data discussing the possible toxic effects of such low levels of lead on the human

Members of SIPI gathered in New York City August 9 to discuss current Institute and committee work. December 5 and 6 in Berkeley, SIPI will hold a committee workshop in which both Institute members and invited representatives from each committee will participate. Details of this workshop will be sent to participants soon. Planning has also begun for a SIPI conference in the spring of 1971. This public meeting will include discussions of the American science information experience and point of view, and how this can suggest useful approaches to public education activities on the part of scientists and citizens in other countries.

nervous system. This issue of *Environment* has served committees and many individual scientists and citizens in their efforts to inform the public of the lead crisis. Several reprintings have been necessary to meet the continuing demand for copies.

The SIPI workshop also stimulated the Minnesota Committee for Environmental Information (MCEI) to begin a fact-finding project in Minneapolis. MCEI continued its work on the lead problem, and in 1969 MCEI and other local groups co-sponsored a lead poisoning screening project. The recent outcome of this program is reported in the *Committee News* section of this *Report*.

The Scientists' Committee for Public Information in New York (SCPI) added the lead problem to its program after the SIPI workshop, and organized Youth Corps teenagers to collect urine samples from 409 children under six. In addition, SCPI investigated the grave problems in New York's old housing, and found no program to prevent lead poisoning in such housing, and no provisions for treatment of lead poisoning when it occurred. The committee decided to mount a public education campaign, and together with a local group, Citizens to End Lead Poisoning, city officials, and the Health Research Council, succeeded in publicizing the facts on New York's lead crisis.

In early 1969, SCPI organized a national conference on lead poisoning,

which was hosted by SCPI, SIPI, and several New York City groups at The Rockefeller University. Dr. René Dubos, a member of the Board of the Scientists' Institute, chaired the conference, which discussed the medical aspects of the disease, the legal recourse for the tenant in dilapidated housing containing lead paint, community education and action, and techniques of housing repair. As a direct result of this conference, Congressman William F. Ryan of New York introduced a bill into Congress to provide federal aid to cities fighting the lead problem. This bill is now in committee. The conference also stimulated other communities to become concerned about lead poisoning, and gave greater momentum to the continuing work on this problem by the New York committee and by a science information group in Philadelphia. These activities are described in the *Committee News* section of this *Report*.

**Other Projects.** The most recent SIPI programs to coordinate committee information are the SIPI environmental workbooks and two task force reports, the *Pesticide Reevaluation Report* and the *Power Report*.

The first eight workbooks were published in the spring of 1970 and have been in demand by committees, colleges, libraries, industries, and the general public. Each workbook introduces a basic environmental problem, discusses the most important facts about the problem, and presents suggested further reading on the particular topic. Some of the workbooks also describe the science information activities undertaken by committees to foster better public understanding of these problems. The workbooks were written by scientists in several committees, and their work was coordinated by SIPI. The Institute received funds for the workbook project from the Sloan Foundation. A full de-

"A society that blindly accepts the decisions of experts is a sick society. The time has come when we must produce, alongside specialists, another class of scholars and citizens who have broad familiarity with the facts, methods, and objectives of science and thus are capable of making judgments about scientific policies. As Warren Weaver has repeatedly emphasized, persons who work at the interface of science and society have become essential because almost everything that happens in society is influenced by science."

René Dubos

scription of the workbooks and their significance in committee work begins on page 1 of this Report.

The task force reports, also described in detail on page 1, are being produced for the use of scientists, rather than non-scientists. Task forces of scientists, selected by SIPI both from within and outside the committees, are assembling the latest technical information on many aspects of pesticides and electric power production. These will prove of great use to scientists in committees and elsewhere. When they are called upon to participate in public information campaigns on these topics, scientists will be able to respond rapidly with comprehensive information. The reports will save them months of time and research by bringing together all the current information in one document. These first two task force reports, supported by the Sloan Foundation, will be followed by others as funding becomes available.

A SIPI project related to the underlying idea of the task forces and still in the planning stage is the on-going task force. Present plans are to assemble the latest available documents, both published and unpublished, on key environmental topics. This would be done by dividing the task among committee scientists across the country, who would mail the

The library of the Scientists' Institute provides information on the interaction of science and society and on various aspects of man's relation with his environment. The library, located at Institute headquarters, 30 East 68th Street in New York, functions as a resource for the science information committees, the Institute, and the general public. A detailed guide to the library has been prepared by SIPI librarian Mari Wasson and is available from the Institute.

latest information they obtain from journals and other sources to the SIPI office. These documents would be classified for easy retrieval by SIPI staff in New York, duplicated, and sent to all committees and to interested groups and individuals. This program will begin when funds for the necessary staff are available.

Yet another important function of the Institute is the funding of committee programs and providing financial assistance to *Environment*. One of the major uses of recent SIPI funding has been the development of youth education projects by three SIPI affiliates. These are discussed in more detail in the boxed paragraph on page 18.

**Associate Membership Campaign.** As SIPI develops additional methods of coordinating and augmenting the resources and information of its affiliated committees,

the need for funds increases. SIPI funding in the past has been made possible by groups such as the Sloan Foundation, the National Science Foundation and the Carnegie Endowment. To provide an additional source of support and to make the work of the Institute better known, SIPI is offering associate memberships. Details about the associate membership program are discussed in the insert accompanying this issue of the Report.

The science information movement has never had so many tasks or so much public interest to satisfy concerning issues of environmental degradation and other topics. It is becoming more urgent than ever that the work of local committees be coordinated and utilized to the fullest extent possible. The present SIPI programs are a beginning of such integration of committee efforts.

## Science Information Committees

Colorado Committee  
for Environmental Information  
2595 Stanford Avenue  
Boulder, Colorado 80303

Committee for Environmental  
Information  
438 North Skinker Boulevard  
St. Louis, Missouri 63130

Michigan Committee  
for Environmental Information  
Environmental Information Center  
P.O. Box 2281  
Grand Rapids, Michigan 49501

Minnesota Committee  
for Environmental Information  
P.O. Box 14207, University Station  
Minneapolis, Minnesota 55414

Monterey Bay Committee  
for Environmental Information  
Monterey Peninsula College  
880 Fremont  
Monterey, California 93940

Nashville Committee  
for Scientific Information  
Department of Chemistry  
Vanderbilt University  
Nashville, Tennessee 37203

Northern California Committee  
for Environmental Information  
P.O. Box 761  
Berkeley, California 94701

Rochester Committee  
for Scientific Information  
5236 River Campus Station  
Rochester, New York 14620

Science Information Speakers' Bureau  
Dr. J. Joseph Levin  
The Chicago Medical School  
2020 West Ogden Avenue  
Chicago, Illinois 60612

New York Scientists' Committee for  
Public Information  
30 East 68th Street  
New York, New York 10021

Stanford Committee  
for Environmental Information  
Stanford University Medical Center  
Stanford, California 94305

Staten Island Science  
Information Committee  
Institute of Arts and Sciences  
75 Stuyvesant Place  
Staten Island, New York 10301

Western Montana Scientists' Committee  
for Public Information  
1650 Madeline Avenue  
Missoula, Montana 59801

ORGANIZING  
*Ithaca*  
Dr. Alfred Eipper  
Department of Conservation  
Cornell University  
Ithaca, New York 14850  
*Philadelphia*  
Dr. Kenneth Barnes  
232 South 21st Street  
Philadelphia, Pa. 19103