

A MESSAGE FROM THE PRESIDENT

Since I am flitting back and forth between the Atlantic and the Pacific with occasional stops in Iowa, I have asked John Austin to bring you up to date on PL 91-224, the Water Quality Improvement Act of 1970.

PL 91-224 has various sections relating to training. Section 19 authorizes \$12,000,000 for FY 70, \$25,000,000 for FY 71, and \$25,000,000 for FY 72. No funds were appropriated in FY 70. At the present time, it is anticipated that appropriations in FY 71 will be very small.

Part of these funds are to be used for 2-year post high school operator training. A group of consultants has been retained to establish the curriculum for this program and to establish the criteria for selecting the institutions to give this training. These criteria should be ready by early 1971, and one institution will be funded in FY 71. Hopefully, nine institutions (one per FWQA region) will be funded in FY 72.

Another area which this bill has monies for is the funding of programs for undergraduate design courses for wastewater treatment facilities. A group of consultants is presently being selected to establish the guidelines for these courses and the criteria for selecting institutions to receive grants to carry out this training.

After the AAPSE seminar at Purdue, it was decided to prepare a manual to use for laboratory courses in Sanitary Engineering. A proposal was written and submitted to FWQA by AAPSE to fund the preparation of a laboratory manual for operators of wastewater treatment plants as well as for laboratory classes at the University level. The project was not funded, but work is proceeding on the manual under the leadership of John T. O'Connor at the University of Illinois.

On page 22 of this Newsletter you will see a request for the names and locations of wastewater treatment plants that could be used for operator and student training. Please send in the form to John Voegtle at the Federation for any plants you know about.

A.A.P.S.E. DUES

There seems to be some confusion as to the amount of the dues and initiation fee for membership in AAPSE. The present schedule has been in effect for some time and is as follows:

	<u>Annual Dues</u>	<u>Initiation Fee</u>
Professors.....	\$50	\$50
Associate Professors.....	\$25	\$25
Assistant Professors.....	\$25	\$25

Of possible interest to some is the fact that dues are paid on a calendar-year basis, and new members only pay dues for the remaining portion of the existing year. For example, an Assistant Professor whose application is approved at the beginning of September would pay the initiation fee plus a third of a year's dues.

Fred Pohland reminds all members who have not paid their 1970 dues to get them in!

PREPARATION OF AAPSE LABORATORY MANUAL

A very successful seminar on the "Content and Preparation of an Operations and Processes Laboratory Manual Sponsored by AAPSE" was held at the Spring 1970 meeting of AAPSE at Purdue. The seminar was held by the AAPSE Seminar Committee which is chaired by Larry Canter (Oklahoma). Following the seminar, President Baumann authorized the formation of a new committee to prepare a laboratory manual under the auspices of AAPSE. This had been suggested because a number of individual efforts at preparing laboratory manuals were underway at several schools. It was felt that these efforts, if coordinated by AAPSE, could lead to a more comprehensive and authoritative laboratory manual which could be periodically revised so as to remain abreast of new needs and developments.

President Baumann appointed John O'Connor (Illinois) as chairman of the new ad hoc Committee to Prepare an AAPSE Laboratory Manual. Committee members were appointed from among those who indicated an interest in working on the manual. Currently, those who have expressed an active interest in contributing to this effort are Shankha Banerji (Delaware), Mriganka Ghosh (Maine), M. Wayne Hall (Maine), Roger M. Jordan (Colorado), Thomas Keinath (Clemson), Billy Kornegay (Georgia Tech), W. M. McLellon (Florida Tech), Clifford Randall (V.P.I.), Robert L. Sanks (Montana State), Vernon Snoeyink (Illinois), and Richard Speece (Texas).

John Austin (Clemson) is serving in an advisory capacity and as a contact member with the AAPSE Board of Directors.

The committee would like to solicit the interest of all AAPSE members who might wish to contribute in some fashion to the preparation of the manual. Initially, the committee would like to ask each AAPSE member who teaches an "operations" or "processes" laboratory course to delve into his files and supply us with a copy of the handouts (laboratory procedures, experiments, etc.) used in the course. These should be mailed to Professor John T. O'Connor, Department of Civil Engineering, University of Illinois, Urbana, Illinois 61801, as soon as possible, preferably prior to 15 September 1970.

Secondly, for those who would like to aid in review, writing, and editing of the manual, the committee would like to hear an expression of interest plus have a statement of the particular subject area in which you would wish to work. The proposed plan is that various groups, numbering perhaps two or three, would have the primary responsibility for preparing various sections of the manual. For example, the manual may have a section on aerobic waste treatment processes. The group responsible for this section would select and/or prepare several different experiments of varying length and complexity for inclusion in the manual.

Chairman O'Connor is currently planning to call a meeting of the entire ad hoc committee, which includes all those who are interested, during the WPCF conference in Boston, 4-9 October 1970. It is hoped that a finalized table of contents can be prepared at this time. Moreover, sub-committee assignments will be made such that active preparation of the manual can commence.

Thereafter, each section of the manual would be reviewed by the entire committee. When finally approved, the manual would then be reproduced in limited quantity by 15 December 1970 and distributed to the membership for field evaluation during the spring semester of 1971. It is anticipated that a second draft would be prepared during the summer of 1971, incorporating those changes in scope, content, and format that are indicated. These

proposals, however, are still tentative pending comment on procedure from the entire committee.

If you would like to help in this important undertaking, please contact the committee chairman soon. Every effort will be made to ensure that individuals contributing to the manual will receive proper recognition for their efforts which certainly will be of service to the profession.

A preliminary table of contents follows for your perusal and subsequent comment.

- I. Coagulation
 - A. Hydrolyzing metallic salts and polyelectrolytes
 - B. Zeta potential control
- II. Flocculation
- III. Mixing
- IV. Sedimentation
 - A. Discrete
 - B. Flocculent
 - C. Hindered
 - D. Zone
- V. Filtration
 - A. Sand
 - B. Mixed media
- VI. Vacuum Filtration
- VII. Flotation
- VIII. Disinfection and Chlorination
- IX. Chemical Oxidation and Reduction
- X. Corrosion and Corrosion Control
- XI. Water Stabilization
- XII. Adsorption
 - A. Batch (Equilibria and Kinetics)
 - B. Continuous flow systems
- XIII. Ion Exchange
 - A. Batch (Equilibria and Kinetics)
 - B. Continuous flow systems
- XIV. Chemical Precipitation
 - A. Softening
 - B. Phosphate removal
 - C. Iron and manganese removal
- XV. Reverse Osmosis
- XVI. Electrodialysis
- XVII. Heat Transfer
- XVIII. Gas Transfer
- XIX. Biological Oxidation-Batch Systems
 - A. Manometric determination of BOD
 - B. Stoichiometry
 - C. Kinetics
- XX. Biological Oxidation-Continuous Flow Systems
 - A. Aerobic complete mixing processes
 - B. Anaerobic complete mixing processes
- XXI. Combustion Processes
 - A. Wet
 - B. Dry

TITLE II WATER RESOURCES RESEARCH PROJECT PROPOSALS

The Office of Water Resources Research, U.S. Department of the Interior, Washington, D.C. 20240, is now accepting **unsolicited** research proposals in the field of water resources for consideration for fiscal year 1972 support, beginning July 1, 1971, pursuant to Title II of the Water Resources Research Act of 1964, as amended.

Title II of the Act authorizes the Secretary of the Interior to make grants, contracts, and matching or other arrangements with educational institutions, private foundations or other institutions, with private firms or individuals whose training, experience, and qualifications are in his judgment, adequate for the conduct of water research projects, and with local, State, and Federal Government agencies to undertake research into any aspects of water problems related to the mission of the Department of the Interior which he may deem desirable and which are not otherwise being studied.

The Office of Water Resources Research desires to encourage and support research investigations dealing with major water problem areas and which hold promise of contributing to the solution of important water problems. In its fiscal year 1972 program, the Office of Water Resources Research proposes at this time to emphasize support of research in the following major subject fields: (1) analysis of planning, managerial, financial, operating and regulatory policies of water resources institutions; (2) water resources policy and political institutions; (3) hydrologic systems analysis; (4) urban and metropolitan water resources problems; (5) environmental considerations in water resources planning and management; (6) evaluation of economic importance of various uses of water, cost allocation, cost sharing, pricing and repayment; (7) analysis and evaluation of water resources projects with special emphasis on identification and evaluation of benefits derived; (8) ground water management and protection; (9) protection and rehabilitation of estuarine resources; and (10) thermal loading problems.

Priority consideration will be given to those proposals that explicitly relate to one of the major subject fields or to any of the problems identified under those major subject fields. However, research support is not necessarily limited to those priority research subjects and any technical approach or idea which holds promise of contributing to the solution of the Nation's water problems will be given every consideration for support.

To allow sufficient time prior to July 1, 1971, for proposal review, contract negotiation, and transmittal to the Congress for a 60-day period as required by Title II of the Act, formal proposals must be submitted to the Office of Water Resources by October 1, 1970, in order to be eligible for fiscal year 1972 funding. Although proposals may be submitted to OWRR at any time, those received after October 1, 1970, will be held for future consideration for support. Detailed instructions and forms for the submission of proposals for consideration for funding under the Title II provisions of the Water Resources Research Act may be obtained from the Director, Office of Water Resources Research, U.S. Department of the Interior, Washington, D.C. 20240.

SYSTEMS ANALYSIS WORKSHOP PROCEEDINGS

At the May Board of Directors meeting, the decision was made not to publish the proceedings of the 4th AAPSE workshop on Systems Analysis in handbook form. Copies of the multilithed proceedings are still available for \$8.00 from John Andrews at Clemson University. Permission for the authors to publish their papers elsewhere if desired was granted by the Board.

UNIVERSITY OF TEXAS TO ABSTRACT FOR W.R.S.I.C.

The Center for Research in Water Resources (CRWR), The University of Texas at Austin, has been designated by the Water Resources Scientific Information Center (WRSIC) of the Office of Water Resources Research, U. S. Department of the Interior, to abstract current literature pertaining specifically to wastewater treatment and management. To insure prompt abstracting and timely dissemination of vital research and studies in this important area, all agencies, firms and educational institutions are requested to furnish copies of major reports, studies, theses, and dissertations to the Center for Research in Water Resources. These documents (or portions thereof) will be abstracted and submitted with the abstracts to WRSIC in Washington, D. C., as required by the abstracting contract.

A.A.P.S.E. FOREIGN LECTURER TOUR

By all available evidence the Foreign Lecturer Tours for the 1969-70 academic year were a great success. This program was arranged by the Visiting Lecturers Committee which was chaired by Don Washington. The comments from participating schools were excellent, and both lecturers indicated that they felt the visit was a rewarding experience.

It would appear that the Board's decision to support this committee's proposal to involve two lecturers was instrumental in revitalizing the program. There had been prior comment from some members that the Foreign Lecturer Tour program as previously handled would only benefit the more prominent sanitary engineering programs. This year there were twenty-one schools which wished to participate; of these twelve were visited. The committee feels that the increased opportunity for small program participation was the result of having two lecturers and adopting a policy which restricted the number of programs participating last year which could be included.

Both lecturers, Prof. Dr. Karl Wuhrmann and Dr. Eichenberger, made their tour from March 8 through March 20. The participating universities were as follows: University of Toronto, University of Michigan, Cornell University, Rensselaer Polytechnic Institute, North Carolina State University, and Florida Technological University which were visited by Dr. Wuhrmann and University of North Carolina, Georgia Institute of Technology, University of Tennessee, University of Texas, University of Arizona, and University of Washington visited by Dr. Eichenberger.

Those programs showing interest but not included this year were Purdue University, Virginia Polytechnic Institute, West Virginia University, Michigan State University, University of Cincinnati, University of Notre Dame, University of Illinois, Ohio State University, and Oak Ridge National Laboratory.

The AAPSE Foreign Lecturer Tour is completely self-supporting, with each participating program sharing the cost of the tour. The charge this past year was \$250 per participating university which covered travel, subsistence, and honorarium.

RICHARD DICK ON SABBATICAL

Richard I. Dick, Professor of Sanitary Engineering at the University of Illinois, will be on sabbatical leave-of-absence during the 1970-1971 academic year. Professor Dick will be studying sludge handling and disposal at the Water Pollution Research Laboratory in Stevenage, Herts., England.

OBJECTIVES OF A.A.P.S.E. AND QUALIFICATIONS FOR MEMBERSHIP

There appears to be considerable interest in the objectives of AAPSE and requirements for AAPSE membership on the part of non-members. For this reason, Articles II and III from the AAPSE Bylaws are presented below.

ARTICLE II - Objectives

The objectives of the Association shall be:

- 2.01 To strengthen and advance the fields of sanitary engineering, water and air resources, environmental health engineering, and related fields through cooperation of academic personnel associated with these fields.
- 2.02 To present a unified position on questions concerned with natural resources on the local and national levels by the exchange of information and ideas among the membership.
- 2.03 To develop long-range plans concerning education in the fields of sanitary engineering, water and air resources, environmental health engineering, and related fields, and to implement these plans by working with professional and scientific societies and state and federal agencies.
- 2.04 To assist federal and state agencies, through advisory and consultative services, in the development of programs related to the education of personnel in the fields of sanitary engineering, water and air resources, environmental health engineering, and related fields.
- 2.05 To establish policies for the guidance of its members and to assist its members on matters relating to the development of academic and research programs on individual campuses.
- 2.06 To assist its members in achieving their legitimate professional objectives in situations involving governmental agencies, professional societies, and other groups concerned with the planning, development, and management of natural resources.
- 2.07 To establish policy on matters involving the interests of the members and the functions of those pertinent professional and scientific societies in which members have vested interests.
- 2.08 To examine the adequacy of graduate curricula, of entrance requirement and of physical facilities for the purpose of establishing criteria and leading to the betterment of education in the fields noted in the previous paragraphs.
- 2.09 To provide assistance to state professional boards, civil service boards, and other groups charged with the licensing and regulation of the sanitary engineering or environmental health engineering professions.
- 2.10 To establish an information service that can keep its members informed on developments in the field of natural resources and related fields at the national and local levels.
- 2.11 To serve as the U. S. organization for international research and educational interest directly related to education and research in the fields of sanitary engineering, water resources, and environmental health engineering.

ARTICLE III - Membership

- 3.01 Members. Membership shall be reserved to those of professorial rank in the fields of sanitary engineering, air and water resources, environmental health engineering or related programs at educational institutions.
- 3.02 Affiliate Membership. Affiliate membership in the Association shall be available to qualified persons who are ineligible for full AAPSE membership as described in Article 3.01 but who are associated with

an academic program in sanitary engineering as described in Article 3.01. Affiliate members shall not have voting rights nor shall they be eligible to serve as members of the Board of Directors. Persons included in any of the three following categories are eligible for affiliate membership:

- (a) Individuals who hold, as their principal employment, teaching or research positions associated with sanitary engineering programs in academic institutions.
- (b) Individuals with research appointments with outside research institutions who also hold academic appointments with a sanitary engineering program.
- (c) Professors in foreign universities who would qualify for membership were it not for their geographical location. Professors from other North American countries, because of their unique opportunities to participate in AAPSE activities, shall be eligible for either type of AAPSE membership.

Except for professors from other North American countries, persons eligible for membership are ineligible for affiliate membership.

3.03 Election to Membership. Eligible academic personnel may become members upon application to the Association and upon payment of the prescribed dues.

EDUCATIONAL SYSTEMS PROCEEDINGS

The proceedings from a workshop entitled "Educational Systems for Operators of Water Pollution Control Facilities" have been completed. The workshop was held in Atlanta in November, 1969, and was sponsored by the U. S. Department of the Interior, FWPCA, in cooperation with Clemson University. The 411-page volume contains papers and addresses by 28 of the nation's leading educators and pollution control practitioners and is edited by John Austin, Clemson, and John Kesler, FWPCA in Atlanta. For information regarding availability for these proceedings, contact John Austin.

ENVIRONMENTAL SCIENCE AND ENGINEERING GROUP (ESEG) FORMED AT N.Y.U.

The School of Engineering and Science, the Department of Environmental Medicine, and the Department of Chemistry of New York University have announced the formation of a group to be known as the Environmental Science and Engineering Group (ESEG). Two specific problems of interest to the group are waste and noise pollution. The rationale of such a group is that it brings together scientists and engineers already engaged in research in environmental science and engineering from a number of disciplines to attack problem areas such as the disposal of solid, liquid, gaseous, and thermal wastes. In addition, the group will endeavor to improve, broaden, and coordinate opportunities for graduate education. It will also serve to provide a meaningful multidisciplinary research program.

Activities of the group, acting in an advisory capacity to the administration, will be directed by a coordinating committee chaired by Professor James Friend of the Department of Meteorology and Oceanography. It will promote maximum utilization of University facilities in furthering research and graduate education and will stimulate joint research and educational activities. It also expects to conduct seminars in which distinguished scientists and engineers inside and outside the University will participate. It will also take responsibility for preparing and issuing bulletins describing ongoing research and research results.

JUDGE TRAIN TESTIFIES ON BEHALF OF THE ENVIRONMENTAL PROTECTION AGENCY

The Subcommittee on Executive and Legislative Reorganization of the House Committee on Government Operations 7/22/70 began hearings on Reorganization Plan No. 3 of 1970 which proposes the creation of an Environmental Protection Agency (EPA).

Russell E. Train, Chairman of the Council on Environmental Quality, was the first speaker to be heard. Chairman Train, representing the Administration, came out strongly in favor of the reorganization plan. In preliminary questioning before he gave his preliminary statement, Train was questioned extensively by Subcommittee Chairman John A. Blatnik (Minn.) and Representative Chet Holifield (Calif.), about how the Council on Environmental Quality will operate in conjunction with EPA. Train explained that the Council on Environmental Quality will continue to exist after the creation of EPA and that both agencies will maintain a close relationship. The Council on Environmental Quality will continue to perform the job of being watchdog for all Federal agencies over the whole scope of environmental problems, while the responsibilities of EPA will extend only to those functions transferred to it, principally activities of an operational type.

There is also a difference in the scope of concern of the two agencies. The Council is responsible for the environment, broadly defined. This includes such subjects as population, land use, and conservation. The EPA will focus specifically on pollution control, which is only part of the Council's responsibilities. Train also stated that the Council will have no direct control over EPA. The new agency will be responsible directly to the President.

Train gave a number of reasons for the reorganization. Among these were to eliminate the overlapping responsibilities of the different Federal agencies and to make the organizational basis for controlling pollution more consistent and adequate. In addition, the new organization would greatly improve the government's ability to recognize and to take action on "new" problems, such as noise. It should be noted, however, that noise pollution control is to remain in the FAA and not to be transferred to the EPA. Another problem EPA should cure would be the divesting of regulatory powers from agencies which have the responsibility for promoting a particular resource or activity. The existence of a unified pollution control agency should also greatly clarify the Federal Government's relations with State and local governments and with private industry.

EPA will start out with 5,065 personnel and a budget of \$1.4 billion for fiscal year 1971. This means that 80 to 90 per cent of the new agency will be made up of the existing Federal Water Quality Administration.

In his testimony, Chairman Train noted that the Ash Commission, which formulated Reorganization Plan No. 3, interviewed approximately 180 experts in the area. The first question asked by Chairman Blatnik centered on why the Ash Commission had not consulted Congress, since it was Congress which years ago initiated legislation concerning water pollution control. Blatnik stated that Congress has been far ahead of the executive or administrative agencies and he was puzzled as to "why we were not consulted among the 180 so-called witnesses interviewed before the establishment of EPA." The remaining questions of the Committee centered around the reasons for the exclusion of a number of activities in the environmental area.

Under the terms of Reorganization Plan No. 3, the following would be moved to the new Environmental Protection Agency: the functions carried out by the Federal Water Quality Administration (from the Department of the Interior); functions with respect to pesticide studies now vested in the Department of the Interior; the functions carried out by the National Air Pollution Control Administration (from the Department of Health, Education, and Welfare); the functions carried out by the Bureau of Solid Waste Management and the Bureau of Water Hygiene, and portions of the functions carried out by the Bureau of Radiological Health of the Environmental Control Administration (from the Department of Health, Education and Welfare); certain functions respecting radiation criteria and standards now vested in the Atomic Energy Commission and the Federal Radiation Council; authority to perform studies relating to ecological systems now vested in the Council on Environmental Quality; and functions respecting pesticides registration and related activities now carried out by the Agricultural Research Service (from the Department of Agriculture). [from Conservation Report]

AAPSE REPRESENTED AT INAUGURATION OF NEW GEORGIA TECH PRESIDENT

In November 1969, Dr. Arthur Hansen was inaugurated as president of the Georgia Institute of Technology in Atlanta. AAPSE was represented by Billy Kornegay of the School of Civil Engineering. Though this is an old item, it was thought to be of interest to the membership of AAPSE as this is the first known occasion of this sort where AAPSE has been invited to be formally represented.

MOBILE LABORATORY-PILOT PLANT AT MONTANA STATE

The recent arrival of a large trailer heralded an important step in the development of new methods for teaching Sanitary Engineering at MSU.

The trailer, built under a National Science Foundation grant for the Department of Civil Engineering and Engineering Mechanics, was designed and constructed as a combination laboratory, office, pilot plant, and if need be, living quarters as well. Packed inside its 44' x 12' x 8' exterior is a surprising amount of laboratory space which will contain complete facilities for analysis of water and waste water. The pilot plant area is arranged so that pilot plant units may be installed to carry out studies for the treatment of water or waste water.

The mobile laboratory-pilot plant system is part of a new concept in the teaching of Environmental Engineering. Dr. Robert Sanks, who directs course-work and research in sanitary engineering, has been deeply concerned for some time with the need for undergraduate students to obtain real experience with treatment processes. As a means of fulfilling this need, Dr. Sanks has developed a new kind of undergraduate course in which students treat municipal water and sewage in pilot plants. Most of the equipment necessary for this type was obtained from two NSF Undergraduate Scientific Equipment grants.

The laboratory trailer is intended primarily for use in undergraduate training. It is designed so that a variety of pilot plant units may be installed according to the type and combination of treatments desired. These include pilot plants for biological oxidation, anaerobic fermentation, filtration, ion exchange, sorption, sedimentation, and flocculation. By interconnection of various units small-scale treatment plants of various types may be modeled.

The trailer will initially be set up at the new Bozeman Sewage Treatment Plant to permit on-line operation using actual sewage.

JUSTICE DEPARTMENT TAKES NO POSITION ON EXPANSION OF LAW TO ALLOW
CIVILIAN SUITS IN POLLUTION CONTROL

In the continuation of hearings on S.3575, the Environmental Protection Act of 1970, the Senate Subcommittee on Energy, Natural Resources, and the Environment, of the Senate Commerce Committee heard testimony on 7/10/70 from Shiro Kashiwa, Assistant Attorney General, in charge of the Land and Natural Resource Division of the Justice Department.

Mr. Kashiwa stated that although the Justice Department is in favor of the stated purpose of the proposed bill, it has declined to take a position pro or con until the Council on Environmental Quality has released its statement. In stating the department's reservations, Mr. Kashiwa stated that "the Department of Justice disagrees with allowing the courts to determine the reasonableness or unreasonableness of polluting activities when the Federal Government has set specific standards through its pollution control agencies. The courts should only be allowed to determine whether the polluter has violated specific standards set by the Federal Government, not determine on its own what is reasonable and unreasonable as far as pollution is concerned." Among the other areas which the Justice Department considered to be somewhat controversial were the issuing of preliminary injunctions to determine the reasonableness of existing administrative procedures concerning pollution, and allowing an individual to bring an action in equity courts without posting the customary bond.

In testimony given on 7/1/70 the Committee heard from Congressman Morris Udall (Ariz.), sponsor of H.R.16436, the House version of the Environmental Protection Act of 1970. Mr. Udall testified that the purpose of the Environmental Protection Act of 1970 is to give the average citizen the power to do something about the environment in which he lives. This bill gives the citizen his day in court if the Government drops the ball, he said. This is done by giving the individual who is affected by pollution an opportunity to confront the polluter in a court of law.

In emphasizing the urgency of the environmental crisis, Mr. Udall stated that: "An alternative is needed to the agency system of pollution control, and I believe the courts are the only forum that can provide that alternative." Mr. Udall admitted that the philosophy of the bill is to load the scales in favor of the environment and against the polluter. The bill, if enacted, will give those persons who are damaged by pollution a much more readily available and quicker remedy. It would take much of the enforcement responsibility out of the agencies and put it in the hands of the courts. Not only would individuals be given standing, the courts would be given a clear remedy to correct the wrong done by the polluter.

At earlier hearings on the bill, the Subcommittee received favorable testimony from Sen. George McGovern (S.D.), Former Attorney General Ramsey Clark, Former Secretary of the Interior Stewart L. Udall, and Professor Joseph Sax of the University of Michigan Law School. Professor Sax had previously drafted a similar bill which has been passed by the Michigan Legislature. Senator McGovern, along with Senator Philip Hart, the Chairman of the Subcommittee, are co-sponsors of the bill in the Senate.
[from Conservation Report]

F.W.Q.A. WASTEWATER TECHNOLOGY STUDY

FWQA is sponsoring a study of a two year post high school Wastewater Technology Program to train wastewater treatment plant operators. Any AAPSE member who would like to have input to this effort may send his comments to John Austin at Clemson University, as he is serving on the study group.

AWARD FOR EXCELLENCE IN SANITARY ENGINEERING EDUCATION

R. O. Sylvester reports that the AAPSE Committee on Awards has received six nominations for the "Third Biennial Award for Excellence in Sanitary Engineering Education". These nominations are now being reviewed by the committee who will make their recommendation for the award to the AAPSE Board. It is planned to present this award, along with the \$1,000 prize donated by Engineering Science, Inc., to the recipient during the AAPSE meeting to be held at the WPCF Boston meeting in October. Previous recipients of the award have been Dr. Perry McCarty of Stanford University in 1966 and Dr. Walter Weber, Jr., of the University of Michigan in 1968.

NEW REGULATIONS FOR CONSTRUCTION GRANTS

New regulations applying to federal water programs require that: (a) Comprehensive river basin-wide programs for pollution abatement must be developed before projects become eligible for federal aid; (b) In evaluating new applications the Federal Water Quality Administration may demand detailed data on the entire river basin's sources of pollution, volume of discharge from each source, effluent types and treatment; (c) No new federal grant will be made to any system designed to treat industrial wastes only. Industry must pretreat wastes going to municipal systems; (d) Municipalities will assess industries a share of operating costs in proportion to their contributions to the total cost of waste treatment; (e) Once-a-year inspection of federally funded facilities by state agencies during the first three years of operation; (f) Design of any new treatment plant must be approved in advance as economical, efficient and effective under FWQA requirements. The regulations, offered by President Nixon in February, were published in March with a 45-day period allotted for changes. [from Water Newsletter]

JOHN ANDREWS RETURNS FROM ENGLAND

J. F. Andrews, Clemson University, returned July 1 from a six-month sabbatical leave at the Water Pollution Research Laboratory (WPRL) at Stevenage, England. His work at WPRL was concerned with the improvement or development of dynamic models of biological processes for wastewater treatment. He also presented seminars at the Water Research Association (England), University of Newcastle-upon-Tyne (England), the Technical University of Vienna, and discussed process control systems with groups in Stockholm and Paris.

UNIVERSITY OF ILLINOIS ANNUAL WATER QUALITY CONFERENCE

Virus and Water Quality: Occurrence and Control is the title of the Thirteenth Water Quality Conference to be held in Urbana, Illinois on February 15 and 16, 1971. This conference is planned for engineers and scientists in education, government, industry and private practice, and for water and wastewater works managers and operators. The Environmental Protection Agency, State of Illinois and the Department of Civil Engineering, University of Illinois are the joint sponsors. Further information may be obtained from V. L. Snoeyink, Assistant Professor of Sanitary Engineering, 3230 Civil Engineering Building, University of Illinois, Urbana, Illinois 61801.

ART BUSCH ANNOUNCES CANDIDACY

Art Busch, Professor of Environmental Engineering at Rice University, has announced his candidacy for the House of Representatives from the 22nd Congressional District of Texas. Professor Busch will run on the Republican ballot.

Prime among the pressing problems facing the United States today are those relating to questions of maintaining environmental quality. It is essential that individuals and groups in responsible charge of decisions relating to environmental issues be fully versed and professionally skilled and experienced with respect to all implications of these decisions. AAPSE strongly endorses the involvement of professionally competent engineers such as Art Busch in the political processes. Through the active participation of engineering professionals in political decision making processes, the best and most current thinking can be brought to bear on the essential problems of the environment.

INTERIOR AND STATE OF TEXAS STUDY COST OF MUNICIPAL WASTE WATER REUSE IN FIVE TEXAS CITIES

The feasibility and cost of reusing municipal waste waters is under study in five Texas cities, Secretary of the Interior Walter J. Hickel announced today.

The cities cooperating in the study are Corpus Christi, El Paso, Midland, San Angelo and San Antonio.

Secretary Hickel said the study is being made by the Southwest Research Institute of San Antonio and Houston, Texas, under the supervision of the Texas Water Development Board and with the technical assistance of the Office of Saline Water and the Federal Water Quality Administration. The study is being financed by the two Interior agencies in the amount of \$50,000.

The study, first of its kind, will develop a comparative cost analysis of facilities, processes and the treatment of waste water to acceptable standards for municipal and industrial reuse. Both desalting and advance waste treatment processes will be considered as a means of achieving the reuse quality goal.

In addition, the study will develop a simplified procedure for establishing the cost of waste water purification for reuse in any city in the United States, the Secretary said. This will serve as an excellent tool for those cities having water supplies too limited to insure meeting their increasing needs on a once-used basis, he added.

POWER EXPANSION PLANS REVIEWED

Consolidated Edison of New York and Northern States of Minnesota have broken a long tradition by sending their ten and 15-year expansion plans to regulatory agencies for review.

The electric power industry is not, of course, the chief cause of air or water pollution. And there is considerable debate as to whether the heating of river and lake water used to cool generating plants is harmful everywhere or just at certain places.

But the industry is the largest in the U. S., and much of what it does is very visible. Million-kilowatt generating plants and transmission lines spanning the countryside cannot be hidden under a bushel basket. What the electric utilities do--or don't do--about the environment is bound to attract the attention of the public. [from Rural Electrification]

48 PESTICIDES HARNESSSED

Secretary of the Interior Walter J. Hickel recently announced a policy banning the use by his department of 16 pesticides and sharply restricting the use of 32 others. About one-third of the nation's land area is federally owned, and the Interior Department manages about 70 per cent of the federal land holdings.

Banned were: DDT, Aldrin, 2-4-5-T, Dieldrin, Endrin, Heptachlor, Lindane, Toxaphene, Amitrol, inorganic arsenic compounds, Azodrin, Bidrin, DDD (TDE), mercurial compounds, Strobane, and Thallium sulfate.

Pesticides placed on a restricted list are to be used "only if other systems will not work, and then only in small applications," a department announcement said.

The restricted list includes these pesticides: Aramite, organic arsenical compounds, Azinphosmethyl (Guthion), Benzene hexachloride, Carbophenothion (Trithion), Chlordane, Coumaphos, cyanide compounds, Demeton, Diazinon, Dioxathion, Diquat; Disulfoton De-syston, DN compounds such as dinitrocresol 1, Dursban, Endosulfan, EPN, Ethion, Kepone, Methyl parathion, Mevinphos (phosdrin), Mirex; Nicotine compounds, Paraquat, Parathion, Phorate Thimet, Phosphamidon, Picloram, Sodium Monofluoroacetate 1080, Temik, TEPP, and Zectran.

The new Interior guidelines on pesticide use require that chemical pesticides should not be used alone when non-chemical, or integrated chemical and non-chemical, techniques offer an alternative option. No pesticide will be used when there is "basis for belief" that water quality will be degraded, and hazards exist that will unnecessarily threaten fish and wildlife, their food chain, or other components of the natural environment. Large scale non-specific applications will not be made of any pesticides, the guidelines specify. A contingency plan will be developed for all pesticide storage areas under Interior control to prevent spills; provide remedial action in case they do occur; and formulate disposal methods.

[from SFI Bulletin]



Happiness is a Dead Bug?

MINUTES OF THE MAY 1970 AAPSE MEMBERSHIP MEETING

President Baumann called the AAPSE open membership meeting to order on Monday evening, May 5, 1970, at the Purdue Memorial Center on the campus of Purdue University. Sixty-three members and guests registered. The present officers and makeup of the Board of Directors were presented to the audience. The minutes of the previous open meeting in Dallas, Texas on October 6, 1969, were read and approved. A financial report was deferred subject to completion of the report of the Audit Committee. President Baumann recapped some of the items of interest from the proceedings of the Board meeting on May 4, 1970, and the motion enacted to authorize the president to act on legislative matters in AAPSE's behalf was reaffirmed.

About 40 persons attended the seminar on the possibility of preparation of an AAPSE manual of laboratory experiments to be distributed to educational institutes by AAPSE. John O'Connor was appointed chairman of a committee to determine the scope and method of preparation of such a manual. Warren Kaufman was assigned the responsibility of arranging a seminar to introduce foreign professors and guests to sanitary education in the United States at the International Conference in San Francisco in July, 1970. The AAPSE seminar at Boston will be co-chaired by Larry Canter and Dick Dague and will probably focus on a discussion of the report of the Education Committee prepared initially under the supervision of Ray Loehr and now being revised by Dale Carlson and his committee.

Chairman Pipes of the Workshop Committee reviewed the reasons for scheduling AAPSE workshops for the improvement of sanitary engineering teaching capabilities and announced the workshop on "Consulting Sanitary Engineering Practice" to be held at Brown's Lake Resort in Burlington, Wisconsin, June 24-26, 1970.

President Baumann announced the candidacy of Art Busch for Congress from the 22nd District of Texas and read a statement indicating AAPSE support for engineers of Art's caliber becoming involved in politics. Art was given an opportunity to address the meeting during which time he explained his reasons for becoming a candidate and requested individual support from the AAPSE membership and guests.

As an introduction to the speaker for the evening, President Baumann reviewed the meeting held in Dallas between representatives of the Conference of State Sanitary Engineers (Mr. Jim Coulter), AWWA (Mr. Henry Grazer), ASCE (Mr. Bernie Berger), and AAPSE (Mr. Bob Baumann) on the topic of support in water supply research together with subsequent meetings with Mr. Jim McDermott of the Bureau of Water Hygiene of the U. S. Public Health Service and Dr. DuBridg, the President's Science Advisor in Washington. These discussions and later contacts with other political groups on the budget for the Bureau of Water Hygiene suggested several recommended alternatives including: (1) encouraging HEW to recognize the Bureau's problems and allocate resources accordingly; (2) request Appropriations Committee to better provide for budgetary requirements; (3) possible rescinding of agreement between HEW and the Department of Interior transferring funds; and (4) request special legislation from the Congress.

Mr. James McDermott, Director, Bureau of Water Hygiene, HEW was introduced; and he described the activities of the Bureau, its priorities, research and training needs, as well as requisites for implementation and financing. President Baumann opened discussion on Mr. McDermott's presentation after which he announced the renaming of FWPCA to the Federal Water Quality Administration (FWQA). House Bill 4148 was described with particular emphasis on potential financial support for undergraduate training in design, operation and maintenance of Water Pollution Control Plants. Mr. Bob Ruhl of the FWQA Training Grants Branch described the implications of the legislation and solicited individual responses for suggestions and opinions from the audience.

MCLELLON NAMED CHAIRMAN AT F.T.U.

Waldron M. McLellan has been named Chairman of the Department of Civil Engineering and Environmental Sciences of Florida Technological University, Orlando, Florida. Mac has also been elected Secretary-Treasurer of the Florida Engineers in Education Practice Section, Florida Engineering Society, for 1970-71. Martin P. Wanielista has accepted a faculty position at F.T.U.

AVERTING ENVIRONMENTAL DISASTER

The following is from a speech by Michael McCloskey, executive director of the Sierra Club, to the American Public Power Association: "This is being widely heralded as the Environmental Decade, not so much perhaps because the solutions are in sight as because it is imperative that we find them. Many scientists believe this may be the last decade in which man can still stave off disaster for the earth's ecology.

"For us to avert disaster, we must change many of our usual ways of thinking....

"First, we cannot continue to plan as if there were only social, economic and political realities, but not biological and physical realities. There are strict limits to resources and their capacity to endure insult. A healthy and stable biosphere must be a prime goal of all public policy and planning. If we forget to recognize this goal, degradation of the habitat for life will continue until we cannot ignore it....

"Second...nature has its law of limits. Absolute results ensue when certain thresholds are crossed, whether our political and economic institutions care to recognize them or not. Techniques of accommodation and compromise, which are characteristic of the political process, may fail completely if they do not understand where ecological thresholds exist.

"Regardless of political rationalizations, a certain amount of auto emissions in a given air basin may produce photo-chemical smog, and a certain amount of utility and industrial smoke may cause weather changes. A certain amount of thermal loading will cause fish to die or species composition and numbers to change. Continuing fossil combustion may cause major climatic changes.

"Third, we cannot continue to treat our environmental problems in an ad hoc, after the fact fashion. We have a society composed of a host of forces that are conducting piecemeal warfare on the environment. Each does as it pleases, and acts as if its small contribution were not cumulative. We need central institutions, keeping track of cumulative effects, that will set ground rules for what can and cannot be done. We must curb narrow, mission-oriented institutions and bring broadly oriented ones into existence."
[from Rural Electrification]

MERCURY POLLUTION SPREADING

Early in 1970, as is generally known, dangerous levels of mercury contamination were found to occur in various species of fish taken in Lake St. Clair, located between Lake Huron and Lake Erie, and in the St. Clair River. As a result commercial fish caught from these waters were seized and all fishing, both sport and commercial, was banned there by Canadian and Michigan authorities. The restrictions were extended, temporarily, to Lake Erie but later relaxed after extensive sampling cleared fish there.

Following considerable soul-searching, Michigan Governor Milliken lifted his earlier ban (coordinated with Ontario authorities) on fishing in Lake St. Clair and the St. Clair River. Purpose was to permit catch-and-release sport fishing--i.e., catching but not keeping--on those waters, commencing with the Memorial Day weekend. Despite the relaxed restrictions, however, few people tried their luck.

Reports by agents of the Michigan Department of Natural Resources (DNR) indicated that the amount of fishing was negligible, as was boating--both down practically 100 per cent. These observations tend to bear out on large scale the fact oft-demonstrated in small-scale tests that being able to keep and eat at least a small part of the catch is an essential aspect of angling. They also strongly confirm otherwise available statistics to the effect that fishing is the principal reason and motivation for boating.

Recent studies by Michigan DNR scientists demonstrated that mercury levels in Michigan pheasants are well below the upper limit (0.5 ppm) set by the Food and Drug Administration (FDA) for commercially-marketed fish. By contrast, however, tests on 39 waterfowl from Lake St. Clair and the Detroit River--mostly "over-wintering" ducks, 27 of them scaup--revealed mercury levels in their breast muscles ranging from 0.01 to 1.7 ppm. The average level was 0.6 ppm, which is 20 per cent higher than the FDA's criterion of acceptability. Tests on 14 other ducks revealed mercury residues below the critical 0.5 ppm level. At least 8 species of waterfowl besides scaup were included in the sample, so that the findings may be significant only for the latter. Scaup actually account for a relatively small fraction (20%) of the bag of waterfowl taken by Michigan duck hunters.

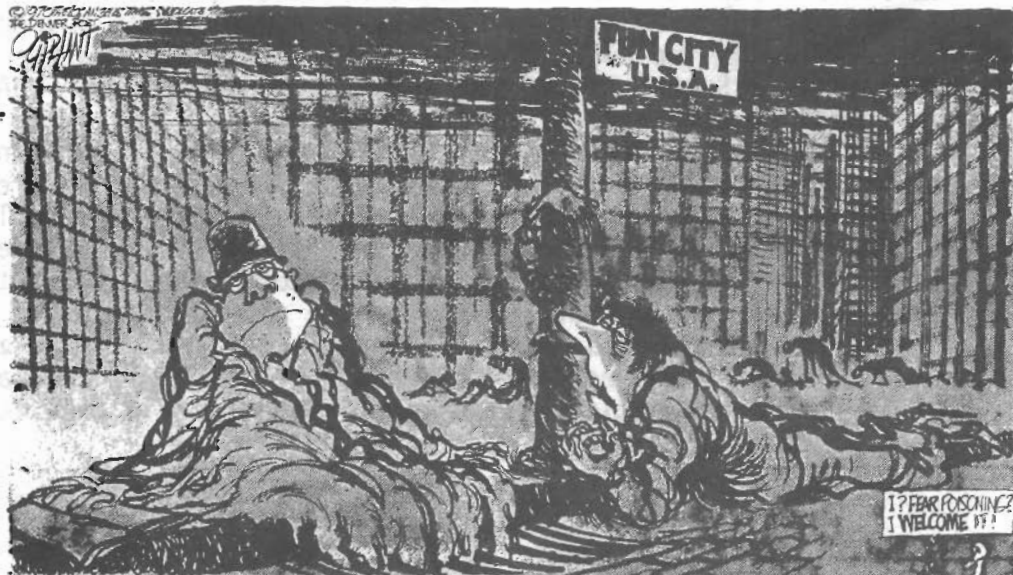
Now comes a report from the Atlanta regional office of the Federal Water Quality Administration that mercury-laden pollution sources have contaminated fish in two Alabama rivers at levels exceeding the maximum tolerance level (0.5 ppm) set by the FDA. According to the FWQA, fish with potentially dangerous levels of mercury were recently collected from the Mobile River below Stauffer Chemical Company and from below Olin Mathieson Corporation in the Tombigbee River at McIntosh. Both plants are involved in the manufacture of caustic and chlorine utilizing a mercury cell.

John R. Thoman, FWQA Regional Director, stated that: "Based on results just received from our Southeast Water Laboratory on edible portions of fish collected from these sources, the public should be advised against eating fish from these areas until further notice." He emphasized that at the present time only two restricted areas were found with contaminated fish and that FWQA's investigation will be continuing in this area to determine the extent of contamination.

Thoman stated further that the Alabama Water Improvement Commission, the Alabama State Health Department, and the Federal Food and Drug Administration have been advised of the results reported from several species of fish, including largemouth bass, bluegill, channel catfish, and carp. The results reported are part of an intensive Southeast Region study recently initiated following reports of mercury contamination in the Great Lakes states and Canada. According to Thoman, the FWQA is currently conducting a nationwide investigation to fully evaluate the mercury problem and isolate all potential pollution sources. This is the first reported incident in the Southeast. [from SFI Bulletin]

MORE MERCURY POLLUTION

Millions of pounds of mercury may be flowing undetected in the nation's waterways, according to federal health officials who also suspect that cases of mercury poisoning do exist but have escaped correct diagnosis because of the relatively recent detection of the problem. Initial evidence that the chemical was contaminating fish and shellfish came to light two months ago in Lake St. Claire. Since then, tests by the Food and Drug Administration have shown "significant" amounts of mercury contamination in some waters of New York, Alabama, Georgia, Kentucky, Louisiana, Michigan, New Jersey, Ohio, Pennsylvania, Tennessee, Texas, Vermont, West Virginia and Wisconsin. Onondaga Lake near Syracuse, New York, has been closed to fishing and warnings have been issued for parts of Lake Erie, Lake Champlain, the St. Lawrence River, the Wisconsin, the Tennessee, the Mobile, the Tombigbee and the Tensaw Rivers. Federal officials say that they originally believed that mercury would not dissolve in water. Further tests have shown that the metal dissolves into a toxic chemical that is immune to the destructive effects of other chemicals in water and is said to last 100 years before becoming harmless. [from Water Newsletter]



'What Else Is New? Mercury Poisoning—Why Do You Ask?'

AWWA RESEARCH FOUNDATION EXPANDS SLUDGE DISPOSAL STUDY

The American Water Works Association Research Foundation is initiating a new project titled "Information Resource for Water Pollution Control in the Water Utility Industry." This research and development project is supported by a grant from the Federal Water Quality Administration and by matching funds contributed by more than 30 participating U.S. water utilities.

The Research Foundation will conduct a program to collect, organize, and distribute current information on waste treatment technology, and to promote its application by water treatment plants. The program will also coordinate and assist in the development of new research and demonstration projects.

The new project is designed to provide information needed by water utilities to apply effective waste treatment technology. The Foundation will issue reports on research projects and problems, improved engineering and plant operating practices, and regulatory developments concerning solids disposal. The project will expand information made available in the Foundation's 1969 report "Disposal of Wastes from Water Treatment Plants," published in the AWWA Journal.

INTERNATIONAL LAGOON SYMPOSIUM

The Second International Symposium for Waste Treatment Lagoons was recently held in Kansas City, Missouri. The three day conference attracted 407 participants from forty states and four foreign countries. Attendees included consulting engineers, regulatory, industrial and educational personnel. The symposium objectives included a review of the current status of the design and operation of oxidation ponds, aerated and anaerobic lagoons. Proceedings of the symposium and the state of the art reviews of the treatment processes will be available by Fall from: Dr. Ross E. McKinney, 217 Nuclear Reactor Center, University of Kansas, Lawrence, Kansas 66044.

PROPHETIC STATEMENT--1870

In the May, 1870, issue of the Scientific American, the Editor reiterated his strong position with regard to disposal of domestic wastes. The message indicates a farsightedness rare 100 yrs. ago and the statement, repeated below, was for the most part received poorly.

Scientific American - May, 1870 - "We have, as our readers are well aware, taken strong ground in favor of the earth closet as a substitute for the water closet, and have based our opinion upon both sanitary and economic considerations. It appears to us, however, that the immense importance of this subject has not seized upon the public mind, and that it fails to be appreciated except by such as have given special attention to the subject of the disposal of sewage. We find this subject fully discussed in all its bearings in the technical journals, and numerous plans--some of them of the most impracticable character--are proposed, but the popular press in this country has been content to drop the subject after a brief discussion and leave the matter to whatever issue destiny has reserved for it. In our opinion no current topic is freighted with such import as the question of cutting off the enormous drain of fertilizing matter now permitted to wash away into the sea, and the purification of the waters that surround large cities from the pollutions now permitted to contaminate them and the atmosphere that sweeps over them." [from W.P.C.F. Highlights]

REPORT ESTIMATES WATER POLLUTION CONTROL NEED AT \$33-37 BILLION

Sen. Edmund S. Muskie (Maine), Chairman of the Senate Subcommittee on Air and Water Pollution, has released a report estimating the nation's water pollution control needs for the next six years at \$33-\$37 billion. The report strongly urged approval of a Federal funding program of at least \$2.5 billion a year for the construction of municipal facilities. It added that "a \$3 to \$4 billion a year Federal program can be easily justified in light of present needs."

The report was prepared by the National League of Cities and the United States Conference of Mayors at Sen. Muskie's request. He had asked for hard figures during water pollution hearings held in May. He is chief sponsor of S.3687, pending before the Subcommittee, to authorize a Federal program of \$2 billion a year for five years. The funds would become the Federal share of \$25 billion worth of municipal facilities.

Administration proposals for financing such facilities also are pending before the Subcommittee. The Administration is recommending a four-year authorization totaling \$4 billion as the Federal share of a \$10 billion construction program.

The report released by Sen. Muskie was based upon a survey of 1,008 cities, counties, and special districts responsible for water pollution control. These jurisdictions serve 89.4 million persons. Their combined needs for the next six years amounted to \$19.9 billion as follows: primary and secondary treatment, \$8.7 billion; tertiary treatment, \$3.9 billion; interceptor and storm sewers, \$7.3 billion. Besides the population covered by the survey, another 50 to 60 million persons now are served by sewage treatment works and related facilities "or should be so served by 1976."
(from Conservation Report)

AUTOMATED GARBAGE COLLECTION

With support of a \$568,000 federal grant, the United Housing Foundation will demonstrate the advantages of using a pneumatic pipe system for collecting refuse from a high-rise apartment complex. The residents will place their refuse in a chute, from which it will be drawn by a 60-mph air stream in pneumatic tubes to a central collection point. The system was developed by the Swedish firm, A. B. Centralsug of Stockholm, and has been successfully operated in several installations in that country. Aero-jet General Corporation (El Monte, Calif.), under license from Centralsug, is the prime contractor for the equipment and its installation. [from Civil Engineering]

78 COLLEGES NOW HAVE ENVIRONMENTAL PROJECTS

Community environmental problems such as air and water pollution, urban blight and land misuse are being tackled by 78 colleges and universities in 36 states under a Federal program administered by the U.S. Office of Education.

The projects are funded under Title I of the Higher Education Act--the Community Service and Continuing Education Program--which enables institutions of higher education to help citizens solve problems in urban and rural communities. Funds are allocated to the states, which in fiscal 1969 allocated more than \$1,300,000 in Federal funds and \$900,000 in state and local funds for environmental projects.

Examples of the projects: The University of South Florida in Tampa developed a project in land use and urban planning involving community leaders, sponsorship of clinics and seminars; Virginia Polytechnic Institute trains new employees of agencies engaged in air pollution control in the fundamentals of control techniques. [from Environmental Health Letter]

WATER SLICKS HAVE HIGH DDT LEVELS

Concentrations of up to 13 parts per billion of chlorinated pesticides were measured in natural surface slicks in Biscayne Bay, Florida, by Dr. Eugene F. Corcoran and Dr. Douglas B. Seba of the University of Miami Rosenstiel School of Marine and Atmospheric Sciences. At the same time, the researchers found that water surrounding the slicks generally contained less than one part per trillion of the pesticides found in the slicks.

"Natural surface slicks may explain the occurrence of pesticide residues in penguins in the Antarctic, or the disappearance of pelicans from nearly all of the U.S. seacoasts," said Dr. Corcoran. "In Biscayne Bay, for example, we have observed gulls and pelicans diving into surface waters to feed on the dense schools of small fish that feed on plankton concentrated in the slicks. Since these sea birds eat many times their weight in fish, they eventually have more pesticide concentrated in their tissues than the fish did."

"Surface slicks are natural oceanographic phenomena which appear as calm streaks or patches on the otherwise rippled surface of Lakes, coastal waters, and open ocean areas," said Dr. Seba. "In our aerial surveys of Biscayne Bay, we have observed slicks varying from a few meters to over 100 meters in width and up to several miles in length. During the summer of 1968, aerial photographs revealed that about 10 percent of the bay was covered with these slicks."

The slicks may be wind-induced or may occur where two water masses converge. The converging water causes compaction of the film of dissolved organic and inorganic molecules normally found on the surface of biologically productive waters, thereby providing a tremendous supply of nutrients. Some of the nutrients are used directly by phytoplankton; others combine into small particles and are used by filter-feeding animals.

The cycling of pesticides depends not only on food web interactions, but on the interaction between the atmosphere, water, silt and bottom deposits. In a study with Dr. Joseph M. Prospero, Dr. Seba found that atmospheric dust collected at Barbados, West Indies, after it had crossed 4,000 miles of open ocean, contained appreciable amounts of several chlorinated pesticides. These pesticides were similar to those found in Biscayne Bay surface slicks, and indicate that the Atlantic tropical tradewinds are responsible for transporting significant quantities of pesticides from the continents to the open-ocean ecosystem. The researchers also found pesticides in the rainwater of tropical hurricanes.

This research was supported in part by the Federal Water Pollution Control Administration, the National Science Foundation, and the Office of Naval Research. [from Outdoor America]

"Changes involving all these aspects of what has been referred to as our Post-Industrial Age are beginning to happen today and their implementation and effects will grow and be felt increasingly in the years ahead.

"The effects of all this on our use of energy will, of course, be significant. For one thing, I believe it will eventually reduce the growth rate of energy use. For example, the doubling of electric capacity demand every ten years is not going to continue indefinitely even with electricity capturing a larger share of the total energy market. Greater efficiency and the miniaturization of many technologies will be responsible for allowing us to accomplish more with less energy." [from Dr. Glenn T. Seaborg, Chairman, Atomic Energy Commission, April 20, 1970]

TRAINING FACILITIES DESIRED

In order to increase the opportunities for students and operator trainees to obtain hands-on experience, it is desired to tabulate proposed, existing or abandoned plants that may be used as training installations. Installations of interest include University plants which have or could have trainees assist with the operations, proposed plants where effluents from certain processes could be recycled within the plant for further treatment and abandoned plants where the discharge could go to an interceptor or another wastewater plant directly. Would you complete the following form and return it to: John A. Voegtle, Director, Education and Training, Water Pollution Control Federation, 3900 Wisconsin Avenue, N.W., Washington, D.C. 20016.

Date _____

Respondent _____

Title _____

Address _____

Phone _____

Name of plant _____

Organization administering plant _____

Address _____

Phone _____

Unit operations and processes in plant _____

Date abandoned (if applicable) _____

A.A.P.S.E. MEMBER AND NON-MEMBER MAILING LISTS

The Editor of the AAPSE Newsletter would greatly appreciate it if you would check the mailing label on this issue. If any changes are in order, please let me know. When your address changes, please advise me so our files can be updated. This applies to members as well as non-members.

As the AAPSE Newsletter goes to many non-members, it would be very helpful if they would complete and return the following brief form. We are quite interested in being of service to the entire profession. This information will help us.

(please detach and mail to AAPSE Newsletter Editor)

NON-MEMBERS:

- Address label is correct.
- Continue sending me the Newsletter.
- I am interested in AAPSE membership.
- Remove me from non-member Newsletter mailing list.

NON-MEMBERS AND MEMBERS:

- Attached is an item for next issue.
- I suggest that the Newsletter be sent to:

- Address label is incorrect, changes indicated below.

