

AAPSE

NEWSLETTER

AMERICAN ASSOCIATION OF PROFESSORS IN SANITARY ENGINEERING

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Vol. 2, No. 4

August, 1967

"I often say that if you can measure that of which you speak and can express it by a number, you know something of your subject; but if you cannot measure it, your knowledge is meagre and unsatisfactory."

--Lord Kelvin

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CHROMATOGRAPHY WORKSHOP IN BOULDER

The American Association of Professors in Sanitary Engineering, as part of its effort to serve all professors engaged in sanitary engineering-oriented activities, conducted its annual workshop this summer on the subject of Fundamentals of Chromatography. Papers and discussion covered the theory and examples of use of paper, thin-layer, and column chromatography. The workshop was held at the Harvest House Motor Hotel in Boulder, Colorado on June 4-7, 1967. The meeting was organized by the AAPSE Workshop Committee under the guidance of Program Chairman, Professor Donald R. Washington of Rensselaer Polytechnic Institute. Cooperating in the Workshop was the College of Engineering, University of Colorado, Boulder. Professor Walter A. Weers of the University of Colorado was in charge of the local arrangements.

A full program of papers and discussions crowded the morning and evening sessions on Monday and Tuesday. The afternoons were free for enjoyment of the wonderful recreational opportunities available in this Rocky Mountain area. The Wednesday sessions were devoted to laboratory demonstrations.

The papers prepared by the Workshop participants were assembled in the form of a Syllabus. Copies of the Syllabus were provided to all registered participants. Additional copies are available and may be purchased from Professor Donald R. Washington, Environmental Engineering, North Hall, Rensselaer Polytechnic Institute, Troy, New York, 12181. Special prices are offered to AAPSE members. The material in the Syllabus on Fundamentals of Chromatography is well organized and represents a valuable reference which should be available to students in sanitary or environmental health engineering. Many NEWSLETTER readers will want to arrange to purchase copies for their library.

AAPSE OPEN MEETING IN ATLANTIC CITY

Another meeting of the American Association of Professors in Sanitary Engineering was held in the Card Room of the Traymore Hotel in Atlantic City, New Jersey at 8:30 pm on the evening of June 7, 1967. This meeting, like most others sponsored by AAPSE, was open to all interested persons and was arranged to present information concerning the activities of one of the Federal agencies active in the areas of interest to sanitary and environmental health engineers. Professor E. R. Baumann, Secretary of AAPSE, presided over the meeting.

The principal speaker for the evening was Mr. Floyd Taylor of the Office of Water Supply, U. S. Public Health Service, who discussed the subject of "Water Supply Research in the Public Health Service."

Mr. Taylor pointed out that, at the present time, water supply research in the Public Health Service is centered in the Bureau of Disease Prevention and Environmental Control. The program of this Bureau is being relocated in a number of Centers around the country. Among these will be the National Air Pollution Control Center to be located in the Research Triangle in North Carolina; the National Center for Radiological Health which is located at Rockville, Maryland; and the National Center for Environmental Control which is to be located on the

campus of the University of Cincinnati in Cincinnati, Ohio. At the present time, all research in the area of water supply is being conducted by the National Center for Environmental Control through its program in "Water Supply and Sea Resources." The program in Water Supply and Sea Resources currently employs about 250 people and has a \$4,000,000 budget. This has increased from a total of \$30,000 per year five years ago. Most of the work at the present time is in the area of shellfish sanitation which has come over from the old Environmental Sanitation and Food Protection Section.

Mr. Taylor also stated that, shortly, the Public Health Service will issue a policy report which will emphasize the need for more research in the area of water supply. At the present time, the in-house research is under the direction of a Dr. Neil Kelly. It is in this section that Gordon Robeck is working. The in-house research is conducted at 4 locations; Naragansette Bay, Mobile Bay, a location in the northwest, and in what was formerly the Robert A. Taft Sanitary Engineering Center at Cincinnati, Ohio. The emphasis at present is in the area of sea resources (shellfish). In addition to in-house research, the section also conducts contract research. For example, they now have a contract with the California State Department of Health to evaluate the effect of taste and odors on consumer acceptance of water.

Out-side research is being and will be directed through research grants from the Office of Grants Administration under the supervision of Henry Steed. The Office of Grants Administration has received funds from the former solid waste program, E. F., occupational health, environmental engineering and food protection, and so forth. All of these funds have been lumped together. Nine grants in water supply have been awarded during the current year for a total of \$173,403 (FY 67). It is expected that these funds will be increased to \$360,000 in FY 68. The 9 grants funded are in the following areas:

1. Nitrogen travel in soils
2. Orthokinetic coagulation
3. Taste
4. Taste and odor identification
5. Empirical prediction of sand filter performance
6. Vanadium
7. Algicides.

The areas of needed research which can be funded through the Public Health Service include the following:

1. quality deterioration in distribution systems
2. taste and odor causes and control
3. trace elements
4. hardness vs. heart disease (beneficial elements)
5. organics in finished water
6. water quality constituents (in drinking water standards)
7. removal of contaminants for potable water (processes, efficiencies, and so forth).

Information for requesting grant support in the area of water supply from the Public Health Service should be directed to the attention of: Mr. Henry C. Steed, Chief, Office of Grants, National Center for Urban and Industrial Health, 8120 Woodmont Avenue, Bethesda, Maryland, 20014.

BOARD MEETS AT PURDUE

The twelfth meeting of the Board of Directors of AAPSE was held on May 2, 1967 in the Purdue Memorial Center on the first day of the Purdue Industrial Waste Conference. President E. F. Gloyna presided at the meeting which was attended by all the officers and directors of the association.

Professor D. J. O'Connor presented a preliminary report of the Research Committee on "Federal Research Agencies and Research Funds." Copies of this report were distributed at the open meeting of AAPSE held the same evening. Future meetings of AAPSE to be held at Atlantic City at the time of the AWWA meeting and at New York at the time of the Water Pollution Control Federation meeting were discussed and planned by the Board.

The Board of Directors voted to participate in the U. S. National Committee for the International Water Pollution Research Association along with ASCE, WPCF, ACS and AIChE. Two representatives from each of the five participating societies will be appointed to the U. S. National Committee for staggered two-year terms. The Board then approved the establishment of a permanent committee to represent the interests of AAPSE concerning the U. S. National Committee. Two members of the committee will be designated as representatives of AAPSE on the U. S. National Committee with the other members of the committee serving as alternates. Professors Pearson, Eckenfelder, Agardy, Krenkel, Dick, and Okun were appointed to the committee.

The Eligibility Committee is continuing to study the eligibility of professional research personnel in some grade of membership in AAPSE. The Board also asked the committee to study the establishment of a new affiliate membership grade for people not currently eligible for membership, including research personnel, people not associated with institutions of higher education, and nonresidents of the U. S. and Canada.

Professor Sylvester reported on the distribution of copies of the Register of Graduate Programs in the Field of Sanitary Engineering Education. Copies have been distributed to participating schools, to government agencies and to other interested organizations. Libraries and Civil Engineering Departments not included in the Register have been notified that copies may be purchased for \$13. The Register would be an unusually valuable reference for undergraduate students looking for information about graduate programs in order to select a school for graduate study in sanitary engineering. The Register may be purchased by members of AAPSE for their personal use for \$6.50.

A new Awards Committee was appointed. Professor J. A. Borchardt is Chairman and Professor R. S. Engelbrecht is Co-Chairman. Other members of the committee are Professors Katz, Kiker, and Smith. The Board also discussed the visiting lecturer program and decided to invite two foreign visitors each year to lecture at institutions in various locations.

GRANTING MECHANISMS DISCUSSED AT PURDUE MEETING

The program of the open meeting of the American Association of Professors in Sanitary Engineering was a forum on the subject: "A Critical Appraisal of the Granting Mechanism for Research Grants in the Federal Government." The meeting was held in the Purdue Memorial Center at 8:00 pm on May 2, 1967, and was attended by more than 130 interested persons. The forum discussion followed a very brief business session chaired by President Gloyna. Vice-President W. J. Kaufman moderated the panel presentation and the free discussion which followed. Professor D. J. O'Connor, Chairman of the Research Committee, reviewed the activities of various Federal agencies primarily involved in environmental health and water resources research. He distributed copies of the Preliminary Report on Federal Research Agencies and Research Funds. Professor R. O. Sylvester then discussed the merits of various mechanisms for review and approval of research grant applications. Professor E. A. Pearson was reporter for the session and was assigned the task of taking notes of the discussion and preparing a report for the consideration of the Board of Directors of AAPSE. A spirited discussion followed during which Mr. Cawley and Mr. Jaffe, both of the Federal Water Pollution Control Administration, made some very helpful points in clarification of the differences between the research grants and research contracts and the mechanisms involved in each.

NEXT AAPSE MEETING

NEW YORK CITY
MONDAY, OCTOBER 9, 1967
AMERICANA HOTEL
MALMAISON SUITE 7 & 8

--at the time of the WPCF annual meeting.

EDITORIAL--THE ACCREDITATION GAP

by John T. O'Connor

For a variety of high-sounding reasons, academic institutions crave accreditation of their curricula. Some see accreditation as a means of testing the quality of education in a program against a minimum "standard." Others seek accreditation to enhance academic prestige. Still others favor accreditation as a means for establishing an elite, or "in" group. Whatever the reasons, accreditation is the vogue.

Engineers' Council for Professional Development (ECPD) has accredited first degrees in engineering for many years. They accredit everything from Aerospace to Welding Engineering. Since each engineering program is accredited separately, there are no generalized categories. As a result, we find that only one institution in the United States is accredited in "Aerospace Engineering Sciences" while there are 23 institutions accredited in "Aerospace Engineering." There are two institutions accredited in "Aero-Space Engineering." A hyphen can make the difference.

As engineers become more well-rounded, humanized, literate, and public-relations conscious, there appears to be an increasing tendency for them to stake-out "new" areas of engineering endeavor in order to keep pace with advancing technology and a dwindling capacity to encompass all of the new technology. As a result, on most campuses we find offshoots of traditional engineering programs seeking accreditation. One-of-a-kind programs such as "Biological and Agricultural Engineering," "Aeronautics," "Construction Engineering," "Chemical Engineering and Petroleum Refining," "Communications," "Naval Architecture," "Ceramic Science," "Materials Science," "Physical Metallurgy," and "Mineral Dressing" have been accredited.

In time to come the measure of the power of a great university may be the number of curricula in which it is accredited. Let us look at the score as it stands today. The following is a list of those institutions having ten or more curricula accredited by ECPD.

Pennsylvania State University (14)
University of Michigan (13)
Virginia Polytechnic Institute (13)
University of Illinois (12)
Ohio State University (11)
University of California (Berkeley) (10)
University of Florida (10)
Georgia Institute of Technology (10)
Iowa State University (10)
University of Minnesota (10)
North Carolina State University (10)
Oklahoma State University (10)
University of Oklahoma (10)
Stanford University (10)

Some well-known institutions are trailing behind. These include: CCNY (4); Cal Tech (3); Harvard (2); North Carolina (1); UCLA (1); Parsons (0); Army (0). Clearly, there is an accreditation gap.

Accreditation of Advanced Degrees

The accreditation gap widened in 1959 when, at the University of California at Berkeley, a loophole in the rules governing accreditation was discovered. This has since led to the accreditation of advanced degrees in engineering. Masters, and, presumably, Ph.D. programs can be accredited since ECPD will accredit curricula leading to a first degree in engineering. As a result, certain M.S. programs are eligible for accreditation. Virtually all M.S. programs so accredited are in "Environmental Health and Sanitary Engineering." The following is a list of institutions having accreditation, either of undergraduate or M.S. curricula, in Environmental Health and Sanitary Engineering:

- University of Cincinnati, M.S. (1966)
- Rensselaer Polytechnic Institute (1966)
- Washington University, M.S. (1965)
- University of Texas, M.S. (1963)
- University of California (Berkeley), M.S. (1959)
- University of Florida, M.S. (1963)
- Georgia Institute of Technology, M.S. (1962)
- Harvard University
- University of Illinois, M.S. (1966)
- Manhattan College, M.S. (1966)
- University of Michigan, M.S. (1964)
- University of North Carolina, M.S. (1962)
- Northwestern University, M.S. (1964)
- Pennsylvania State University
- Virginia Polytechnic Institute, M.S. (1966)
- University of Minnesota, M.S. (1966)
- Vanderbilt University, M.S. (1966)

Why so many of these institutions have sought accreditation of an M.S. degree is a difficult question to answer. Many sanitary engineering faculty either are opposed to accreditation or have serious reservations about the effect of accreditation on graduate programs. The chief objection voiced is that accreditation would tend to lead to a uniform, "hard-core" curriculum. In addition, large programs would be "in," small programs would be "out" because of staff requirements. Accreditation, it appears, is "purifying."

The university administration may well be the governing factor in the decision to seek accreditation. At one institution, the department head and dean of engineering became aware of the opportunities for the accreditation of the M.S. program in sanitary engineering. The sanitary engineering faculty at the university, six in number, met to discuss the advisability of applying for accreditation. Three of the faculty were opposed to accreditation, two were "not in favor," one was neutral. The issue was resolved when it was rumored that "the dean favors it." As a result, the University moved to close the accreditation gap.

The question of accreditation has generated intense apathy on other campuses as well. We note that a small eastern college is contemplating offering only a Ph.D. degree in sanitary engineering. They will be able to claim, therefore, that they have the only accredited Ph.D. program in sanitary engineering in the nation.

It is also conceivable that an M.S. or Ph.D. program in engineering could be accredited for non-engineers without being accredited for engineers. For example, the student with a B.S. in Biology or Chemistry could obtain his first engineering degree in a sanitary engineering program, whereas a B.S. in engineering would not. This brings up the corollary question as to whether students without a baccalaureate in engineering should be awarded an engineering degree at all. Only one point is clear, the "Philadelphia lawyers" at Berkeley have started another landslide. However, before everyone is engulfed by the flow, perhaps ECPD should re-evaluate its mission in accreditation, to determine whether it really meant to accredit graduate programs. If not, a little fence mending is in order.

UDALL APPOINTS NEW OFFICIALS FOR WATER POLLUTION CONTROL

Secretary of the Interior Stewart L. Udall recently appointed three new deputies to assist Frank C. DiLuzio, Assistant Secretary of the Interior for Water Pollution Control.

Dr. Jacob I. Bregman, of Glencoe, Illinois, was appointed Deputy Assistant Secretary for Water Pollution Control. He will provide scientific leadership for the development and application of technology in the Department's stepped-up effort to clean up our Nation's waters. He will be responsible for engineering research and the applied sciences in the water pollution control and saline water conversion programs. Dr. Bregman has been on the staff of the IIT Research Institute in Chicago since 1959, serving as Manager of the Water Research Center and, since 1965, as director of the Chemical Sciences Division. Dr. Bregman received his Ph.D. in physical chemistry from Polytechnic Institute of Brooklyn in 1951. He has served on a number of important government advisory committees and has been chairman of the Illinois Air Pollution Control Board from 1963 to the present.

Dr. S. Fred Singer, of Miami, Florida, has been appointed Deputy Assistant Secretary for Water Pollution Control. In his new position, Dr. Singer will be responsible for basic scientific matters relating to environmental pollution and control, water resources development and saline water conversion. Dr. Singer received his doctorate in physics from Princeton University in 1948. Since 1964 he has been Professor of Atmospheric Science and Dean of the School of Environmental and Planetary Sciences at the University of Miami. He has been on the faculty of the University of Maryland and Johns Hopkins University. He has served in several government posts and has been especially active in the weather satellite programs.

Elmo R. Morgan, a Vice-President of the University of California and a civil engineer, has also been appointed Deputy Assistant Secretary for Water Pollution Control. Mr. Morgan will advise and aid Mr. DiLuzio in administering programs for control, abatement, and prevention of water pollution, including the economic conversion of saline water. A resident of Lafayette, California, Mr. Morgan has been Vice-President for Physical Planning and Construction at the University of California. He received his degree in civil engineering from the Utah State University in 1935. He worked at Los Alamos, New Mexico, first with the Army Corps of Engineers and then with the Atomic Energy Commission. He was associated with the University of Utah from 1951 to 1960 and was Vice-President for Business when he assumed the post with the University of California. He served as Director of Highways for the State of Utah for two years while on leave from the University of Utah. Mr. Morgan has also been a consultant to the Ford Foundation and the State Department.

NEW CIVIL ENGINEERING BUILDING AT ILLINOIS

Seven years from planning to completion and two years behind its construction schedule, the first stage of the new Civil Engineering Building at the University of Illinois has been completed and is now being occupied. The new structure houses a major part of the facilities of the Department of Civil Engineering. The four-story building, which cost more than \$4,000,000, provides space for laboratories for the Department's structures, soil mechanics, and sanitary engineering groups, and offices and shop and auxiliary services for most of the Department. The building even houses a concrete mixing plant.

The sanitary engineering laboratories, which occupy the entire fourth floor of the new building, provide over 11,000 square feet of usable floor space. A dozen special-purpose laboratories house equipment for the study of air pollution, water treatment, waste treatment, and stream pollution. Special rooms include those to be used for construction of pilot plant units, for radioisotope handling and storage, for storage of glassware and reagents, and for dishwashing. Four temperature-controlled rooms have also been installed. It is estimated that the new sanitary engineering laboratories will provide sufficient laboratory space for approximately 45 graduate students and research assistants.

At least two other phases are scheduled to be added to the new civil engineering building in order to house the remainder of the civil engineering staff, which numbers about 100 academic personnel. The second phase, which will provide additional structural engineering laboratory space as well as laboratories and offices for hydraulic engineering and the Water Resources Center, is expected to be completed by 1969.

ENVIRONMENTAL HEALTH ENGINEERING PROGRAM AT THE UNIVERSITY OF ALASKA

A formal program leading to the Master of Science degree in Environmental Health Engineering was inaugurated at the University of Alaska, College, Alaska, during the 1965-66 academic year. The program is being supported by a Public Health Service Training Grant.

Although the present population of Alaska is small, the problems in sanitary engineering are quite formidable. The seasonal extremes in ambient air temperature (90°F in summer to -60°F in winter) in hours of sunlight affecting algal growths (0 to 24 hour variation) and the existence of extensive areas of permafrost all tend to shed a new light upon what is considered standard sanitary engineering practice.

The academic program being offered is designed to train graduate engineers in the general field of sanitary engineering with a specific knowledge of applications for far Northern installations. Although much emphasis is placed on the latter where conditions are significantly different than those found in more temperate regions, it is the aim of the program to give the student a broad enough knowledge of the field so he will "feel at home" working in the southern areas.

Present facilities include a well equipped sanitary engineering laboratory. In addition, the vast unpopulated areas in Alaska serve as an ideal outdoor laboratory for the study of streams, ponds, and lakes in their natural state.

The program is being directed by Dr. R. Sage Murphy, Associate Professor of Environmental Health Engineering. Staff members of the Institute of Marine Sciences, Institute of Water Resources, the College of Biological Sciences

and Renewable Resources, and the Arctic Environmental Engineering Laboratory serve as instructors and advisors in their specialties. Staff members and facilities of the Arctic Health Research Laboratory (USPHS) and the Alaska Water Laboratory (FWPCA) are utilized. These Federal facilities are both located on the campus. Miss Ann Miller, a research biochemist, holds an appointment on the staff of the program.

Research presently being conducted by staff and graduate students include studies of:

1. Heat Losses in a Circulating Water Distribution System in Sub-Arctic Alaska (supported by USPHS).
2. Treatment of Low Quality Waters by Foam Fractionation (supported by Institute of Water Resources).
3. Biological Degradation of Wastes under Psychrophilic Environments (supported by Institute of Water Resources).
4. Evaluation of an Oxidation-Ditch Wastewater Treatment Plant in Sub-Arctic Alaska (supported by FWPCA).
5. Survey of Water Quality Requirements in Alaskan Campgrounds with Projections of Recreation Demands and Benefit/Cost Analysis for Site Selection (supported by Office of Water Resources Research, Department of Interior).

PLAN NOW FOR TRAVEL TO PRAGUE

The Fourth International Conference on Water Pollution Research is planned for Prague, Czechoslovakia on September 2-6, 1968. Arrangements are already being made by the American Travel Committee to provide Group Flights from San Francisco to Paris and from New York to Paris with return flights from Prague via Paris to New York and San Francisco. For further travel information and reservations for flights and accommodations in Prague, write to Professor Franklin J. Agardy, Chairman, American Travel Committee, Department of Civil Engineering, San Jose State College, San Jose, California, 95114.

BERKELEY CONFERENCE ON GROUND WATER RECHARGE

The Sixth Biennial Conference on Ground Water Recharge, Development and Management will be held September 13-14 at the University of California at Berkeley. The conference is developed around the theme that the best policies and practices will result when legislators, attorneys, engineers, administrators, scientists, economists and other interested people work together in understanding. Particular emphasis will be directed to the complex problems of governmental policy making, management of ground water resources to meet conflicting needs, ground water pollution, the role of the ground water user in planning and policy making, and recent research findings. The conference has been planned to encourage maximum interchange of ideas and discussion among the participants. Information regarding the program, hotel accommodations and other conference details may be obtained from P. H. McGawhey, Director, Sanitary Engineering Research Laboratory, University of California, 1301 S. 46th St., Richmond, California, 94804.

VANDERBILT ADDS NEW STAFF

Vanderbilt University announces the addition of two new faculty to their Sanitary and Water Resources Engineering staff. Dr. Karl B. Schnelle, Jr., formerly Manager of Education and Research for the Instrument Society of American and a Chemical Engineer, has joined the faculty as an Associate Professor of Sanitary and Air Resources Engineering. Also, Dr. Frank L. Parker, formerly Leader of the Radioactive Waste Disposal Section for Oak Ridge National Laboratories, has assumed the position of Associate Professor and Associate Director of Sanitary and Water Resources Engineering.

REINFORCEMENTS FOR UNIVERSITY OF MASSACHUSETTS

The School of Engineering at the University of Massachusetts will add three more staff members in Sanitary Engineering this fall. These individuals are Rolf Skrinde, John Nebiker, and D. Dean Adrian. Professor Skrinde is returning to the U. S. from Bangkok, Thailand, where he has been teaching at the SEATO Graduate School of Engineering. Formerly he was at Washington University, St. Louis. Both Professor Nebiker and Professor Adrian come to Amherst from Vanderbilt University. Professor B. B. Berger and Professor T. H. Feng welcome these reinforcements and are now planning to enlarge their training and research effort.

PFEFFER JOINS UNIVERSITY OF ILLINOIS STAFF

Dr. John T. Pfeffer has been appointed Associate Professor of Sanitary Engineering in the Department of Civil Engineering, University of Illinois, Urbana. From 1962 to 1967 Dr. Pfeffer was a member of the Civil Engineering Department at the University of Kansas. He received his Ph.D. in Sanitary Engineering from the University of Florida in 1962.