

# Meetings

## Oceanography in the Midwest

A two-day symposium on Oceanography in the Midwest, a discussion of ways and means to expand the nation's oceanographic research and educational programs, was held on the University of Wisconsin campus, 15-16 May. The symposium was an outgrowth of President Kennedy's public recognition, in two major speeches, of the importance of oceanography, from the point of view both of scientific development and of national defense.

The meetings began with an address by Conrad A. Elvehjem, president of the University of Wisconsin, who stressed the need for expanded research programs. It has become one of our national goals, he said, to obtain a vastly improved understanding of the seas around us, and increased knowledge of oceanography can serve both to link us in a common bond with other nations and to serve as a bulwark in our defense.

There were more than 100 participants, from the nation's oceanographic stations along the Atlantic and Pacific coasts, from federal agencies, and from universities of the Midwest. The symposium was sponsored by the U.S. Office of Naval Research, the National Science Foundation, and the Committee on Institutional Cooperation of the Council of Ten and the University of Chicago.

During the first morning of the symposium some of the nation's leading oceanographers described the research activities and educational curricula under way or planned at the oceanographic laboratories and discussed the part the Midwest may play in these programs.

Richard H. Fleming of the University of Washington said the really challenging problems of the future go beyond mapping and measuring. The United States now needs to know more about the processes at work in the oceans, the heat budgets, the reasons why the sea behaves as it does.

Fritz Koczy of the University of Miami added that measuring oceanographic phenomena was only the first step; "then must come the theoretical work to explain the questions which arise from the data obtained. . . . These questions can be answered in the Midwest as well as they can at the sea's edge."

Paul M. Fye of the Woods Hole Oceanographic Institution noted that one problem encountered in training oceanographers in the Midwest is that of giving students opportunities for training aboard seagoing vessels. Co-operative programs should be worked out with oceanographic institutions in order to give training at sea as part of the curriculum in oceanography of midwestern universities, he said. Travel is now so easy and rapid that this is no longer a serious problem, but coastal stations will require expanded facilities to accommodate larger numbers of students.

The afternoon was devoted to presentations of papers by scientists of the Midwest who are currently conducting research either in the oceans or in lakes. Arthur D. Hasler of the University of Wisconsin reviewed research that has been done in small lakes in Wisconsin and cautioned that national oceanographic programs should certainly include expansion of work on the inland lakes that may serve as models for experimental oceanography.

John C. Ayers of the University of Michigan pointed out that the Great Lakes offer an excellent training ground for oceanographers. "Most of the influences which are studied in the oceans are equally available in the Great Lakes," Ayers said. Reid A. Bryson of the University of Wisconsin added that lakes are models of the sea and that research into many aspects of oceanography can be conducted most readily in small bodies of water.

Robert Miller and Ralph Johnson of the University of Chicago described the cooperative programs worked out between the University of Chicago's department of geophysical sciences, the Woods Hole Oceanographic Institute, and the Pacific Marine Station. This program provides for an exchange of professors and for space at the coast-based institutes during the summer months.

Programs in oceanography of the National Science Foundation, the Office of Naval Research, and the National Institutes of Health were presented on the second day of the symposium. This presentation was followed by a panel discussion, in which the audience participated, on ways and means to expand research and training programs in the Midwest.

Willis E. Pequegnat, associate program director of the National Science Foundation, outlined the Founda-

tion's educational programs. George Sprugel, Jr., NSF's program director for environmental biology, stressed the willingness of his division to support valuable programs regardless of geographic location.

John Lyman, associate program director for earth sciences (oceanography), National Science Foundation, and Irving Gerring, executive secretary of the environmental sciences and engineering study section, National Institutes of Health, described the workings of their organizations.

Arthur E. Maxwell, head of the geophysics branch, Office of Naval Research, outlined an expanded 10-year oceanographic program to be carried on by the Navy and stated that funds will be available to institutions for supportive work.

The panel discussion was led by George Woollard, University of Wisconsin, who, in a lecture the previous evening, had surveyed our present knowledge of the earth's crust.

An informal poll made at the symposium showed that many students have asked for training in oceanography at universities of the Midwest and that many more such requests are anticipated. The symposium participants agreed that midwestern institutions can make a significant contribution if coastal facilities are made available.

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## Forthcoming Events

### August

28-31. Botanical Soc. of America, Lafayette, Ind. (B. L. Turner, Dept. of Botany, Univ. of Texas, Austin 12)

28-2. Mechanics of Turbulence, intern. colloquium, Marseilles, France. (A. Favre, Faculté des Sciences, Université, Marseilles)

29. American Soc. for Horticultural Science, Lafayette, Ind. (R. E. Marshall, Dept. of Horticulture, Michigan State Univ., East Lansing)

29-1. American Mathematical Soc., 66th summer meeting and 40th colloquium, Stillwater, Okla. (J. W. T. Youngs, AMS, 190 Hope St., Providence 6, R.I.)

29-1. Society for Industrial and Applied Mathematics, Stillwater, Okla. (G. Kaskey, Remington Rand UNIVAC, P.O. Box 500, Blue Bell, Pa.)

29-6. Planning of Experiments, intern. colloquium, Paris, France. (D. Dugue, Institut de Statistique de l'Université, 11 rue Pierre Curie, Paris 5)

29-7. International Statistical Inst., 33rd session, Paris, France. (G. R. Chevy, 29 Quai Branly, Paris 7)