The Japanese workers share our concern for finding balanced solutions to academic evolution and reform. The ability to conduct meaningful basic science research in a well-planned and painstakingly equipped facility may be sacrificed by oversights in hastily adopted solutions in the name of reform. Some Japanese "reformed" universities are now learning of problems that were unforeseen or ignored and are seeking ways that a liberated, equalized student-faculty community can attack nontrivial scientific problems which depend on multiyear development of skills and facilities by a group dedicated to a common goal.

The conference was an efficient and productive mechanism for exchange of current research concepts and techniques. It also produced or strengthened at least four United States–Japan collaborative research efforts. Our information channels are now quite adequate in the literature because of the use of European and U.S. journals by Japanese scientists and the continued improvement of the *Japanese Journal of Biochemistry*. The exchange of professional scientists for extended periods of study needs much better balance. Any well-qualified U.S. scientist who trains himself in the language and arranges to study in one of the several excellent research centers in Japan deserves encouragement and support by our foundations and professional societies. The U.S. science community and our whole society have much to learn from such an exchange.

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Bioresources of Shallow Water Environments

A national symposium on hydrobiology was conducted under the sponsorship of the American Water Resources Association in Miami Beach, Florida, during 24–27 June 1970. The theme of the symposium was directed to shallow waters that supply vast amounts of harvestable materials. The objectives of the meeting were especially pertinent inasmuch as the biological aspects of water resources are becoming increasingly important as greater demands are placed on total water resources by national and international economies.

The first day of technical sessions emphasized the use and potential of bio-

resources through harvesting, conservation, and development. Early in the discussions the importance of shallow water environments (fresh water, estuarine, and marine) was established. Over 90 percent of the world fish catch is taken from shallow marine waters, which constitute only 7.6 percent of the ocean's surface. One-half of all marine fisheries are in the near-coastal regions, which are dependent upon estuaries for their sustained stability.

Other general discussions during the first day included such topics as the economic importance of freshwater algae and aquatic invertebrates as new sources of drugs and biologically active agents. The distribution of coastal biota as related to commercial and recreational fishery resources was also discussed. Other speakers discussed engineering aspects in protection of the aquatic environment and the need for the conservation of marine species and areas. A change in political attitudes was listed as a necessary first step toward conservation and development.

During the second day aquatic bioresources were considered in relation to their environment. A general concept conveyed by ten of the twelve speakers was that changes in environmental quality produced by the cultural activities of man were the greatest threat to bioresources. In an excellent paper on eutrophication, several cases were indicated in which the aging of a body of water had actually been reversed when pollution had been diverted or eliminated. One of the most controversial papers de-emphasized the presence of phosphorus and nitrogen as a principal agent in eutrophication and indicted carbon dioxide as a causative factor in promoting growth of algal blooms.

The measurement and detection of bioresources were considered during the third day of the symposium. Methods of remote sensing were introduced by informative papers on aerial photographic methods and infrared and multispectral techniques. The practical application and accuracy of these methods were illustrated by five other speakers. New procedures in bioresources study were described during the afternoon.

The production of harvestable materials from the oceans and fresh waters has tripled in the past two decades, and the present production can be substantially increased without exceeding sustainable yield and without including possible production from aquaculture. The potential increase in ocean productivity will result largely from utilization of presently unexploited and underexploited species and areas and in international cooperation for the prevention of overexploitation.

Even though it is generally agreed that the "seas" can furnish vastly more food and materials for humans than is presently being taken, there are limits to production as there are limits to shallow-water environments. A definite threat exists to aquatic bioresources in the impact of the ever-expanding human population on the delicate ecological balance. The maintenance and improvement of environmental quality is a must for the continuation of increased aquatic production.

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Note

1. The proceedings of the symposium will be available from the American Water Resources Association, P.O. Box 434, Urbana, Illinois 61801.

Forthcoming Events

November

11–13. **Geological** Soc. of America, 83rd annual, Milwaukee, Wis. (L. M. Cline, GSA, P.O. Box 1719, Boulder, Colo. 80302)

11–14. **Seismological** Soc. of America, Milwaukee, Wis. (D. Tocher, P.O. Box 826, Berkeley, Calif. 94701)

12–15. American **Heart** Assoc., 43rd annual scientific sessions, Atlantic City, N.J. (AHA, 44 E. 23 St., New York 10010)

15–19. **Engineering in Medicine and Biology,** 23rd conf., Washington, D.C. (R. Johns, 522 Traylor Bldg., Johns Hopkins School of Medicine, Baltimore, Md. 21205)

15–19. American **Nuclear** Soc., Washington, D.C. (J. Stouky, NUS Corp., 2351 Research Blvd., Rockville, Md. 20850)

16–17. American **Petroleum** Inst., 50th annual, New York, N.Y. (H. A. Fondu, 1271 Avenue of the Americas, New York 10020)

16–18. **Chemical Marketing Research** Assoc., San Francisco, Calif. (C. W. Slade, Jr., Chemical Marketing Research Assoc., 100 Church St., New York 10007)

16–19. Society of **Vertebrate Paleontology,** Toronto, Ont., Canada. (J. H. Ostrom, Yale Peabody Museum, 170 Whitney Ave., New Haven, Conn. 06520)

17–19. Fall Joint **Computer** Conf., 7th annual, Houston, Tex. (B. Pollard, RCA–NPL, 200 Forest St., Marlboro, Mass. 01752)

17–20. **Magnetism and Magnetic Materials,** 16th annual conf., Miami Beach, Fla. (H. C. Wolfe, American Inst. of Physics, 335 E. 45 St., New York 10017)