



At the Instituto de Ingeniería, México, D. F. (left to right) Dr. B. Kinsman, MSRC, Dr. Carlos Cruikshank, Jéfé en Hidráulica, I.I., and Dr. J. R. Schubel, Director, MSRC.

INTERNATIONAL COOPERATION

On the not unreasonable assumption that if you want to start a program of international cooperation, the first step is to find out what interests the people with whom you propose to cooperate, from March 4 to March 12 Drs. SCHUBEL and KINSMAN, at the invitation of Dr. Springall, visited Mexico City, Mexico. Dr. Springall is a member of the Faculty of Engineering of the Universidad Nacional Autónoma de México (UNAM) and Jéfé del Doctorado en Hidráulica.

During their stay they discussed cooperation with a number of men from UNAM's Instituto de Ingeniería (I.I.), the oldest and largest research institute associated with the university. Among them were Dr. Daniel Resendiz N., Director, Dr. Carlos Cruikshank, Jéfé en Hidráulica, Dr. Gerardo Hiriart P., O. Rafael García K., Ing. Domingez Cobo P., Ing. José Antonio Maza A., and O. Rafael Saenger F. Mexico has just recently begun extensive study and development of its coastal zones.

During many lively talks it was gratifying to find that the MSRC and the I.I. were already actively engaged and funded in four common areas of research: thermal discharges, inlet stabilization, disposal of calcium sulfate wastes, and organization and support of field studies. These common interests give a firm basis for profitable cooperative exchanges between investigators working on similar problems.

With the help of our Mexican friends a plan has been worked out and the search for support has begun.

MSRC DOCTORAL PROGRAM IN COASTAL OCEANOGRAPHY APPROVED

On 21 April 1978 the Board of Regents of the State Education Department approved MSRC's plan to offer the degree of Doctor of Philosophy in Coastal Oceanography. This extends the Center's present Master's degree programs to the full range of graduate study.

MSRC anticipates great advantages from the expanded program. For the Master's level students, the presence of a group of more mature people who are nearing the highest professional level and who can mediate between them and the MSRC's professional activities will stimulate and enrich their educational experience. The Ph.D. candidates will be a source of stimulation for their professors and will be capable of substantial research with only minimal supervision. SUNY will offer, for the first time, a complete professional training in coastal oceanography. The addition of advanced students will make the MSRC better able to respond to societal needs, and the State will be able to draw on the knowledge of a growing corps of oceanographers trained on and familiar with its own waters.

MSRC ASSOCIATES

We welcome the Long Island Marine Contractors Association as a new MSRC Club Associate.

The first annual MSRC Associates Days will be held on 18-19 August 1978. On Friday evening the Associates will be given an overview of the Center's programs in research, graduate education, and public service. Dinner will be provided at the University's guest estate, SUNWOOD, overlooking Long Island Sound. On Saturday MSRC Associates will participate in an oceanographic cruise aboard the R/V ONRUST in Long Island Sound where they will employ a variety of geological, biological, chemical, and physical oceanographic sampling techniques.

New MSRC Associates will be invited to participate in these activities. For information, contact Mrs. Jeri Schoof, Marine Sciences Research Center, State University of New York, Stony Brook, New York 11794 or call (516) 246-6543.

PEOPLE AND MEETINGS

Professor AKIRA OKUBO presented two invited lectures at Dalhousie University, Halifax, Nova Scotia: Physical modeling for animal aggregations in locomotion, such as insect swarms, zooplankton swarms, fish schools; Critical size of plankton patches and chlorophyll fluctuation spectrum.

WILLIAM WISE presented an invited paper entitled, "Erosion and Erosion Control Along the North Shore of Long Island" at a meeting sponsored by the Virginia Sea Grant Program in Williamsburg, VA. in May. The paper was co-authored by W. M. Wise, P. Sanko, and J. R. Schubel.

In April Professor J. L. McHUGH participated in Career Days at SUSB and talked with prospective students about marine biology. In April he also presented the keynote speech at the Conference of the Northeast Clam Industries held at Hyannis, MA. The title of his presentation was "United States Clam Industry: Where Is It Going?" Professor McHugh presented an invited paper entitled "History of the Fisheries of the Middle Atlantic Bight Region" at the April meeting of the Mid-Atlantic Fisheries Development Foundation, in Ocean City, MD. In May McHUGH participated in a workshop on Limited Entry into Fisheries, sponsored by the University of Washington Institute of Marine Resources.

Professors BOKUNIEWICZ, CARTER, CHUECAS, DUEDALL, and WILSON participated in a workshop at the University of Rhode Island on May 3-5, 1978. The workshop was sponsored by the University's Center for Ocean Management Study and was designed to identify important and tractable problems associated with the coupling of estuarine and continental shelf waters. Participants from 12 institutions as well as representatives of NSF, EPA, and NOAA discussed major estuarine systems along the east coast.

Professor DONALD POWERS presented an invited paper entitled "A Wayward Virologist: From IBV and VEE to DDT and PCBs" at a symposium on "Viruses as Pathogens and Carcinogens," at Michigan State University in May 1978.

Professor J. R. SCHUBEL made a presentation before the SUNY Board of Trustees on 21 February 1978 describing the collaboration between the New York Sea Grant Institute and the Center. Dr. Schubel joined Dr. JOHN COSTLOW, Director of the Duke Marine Laboratory and Dr. DIRK FRANKENBERG, Director of the NSF's Division of Ocean Sciences in a review of the College of William and Mary's marine programs in March 1978 in Virginia.

Two MSRC students presented talks at the spring meeting of the New England Estuarine Research Society held May 5 and 6 at the Bigelow Laboratory in Boothbay Harbor,

Maine. D. HIRSCHBERG presented "Geochemical effects of episodic sedimentation events in the northern Chesapeake Bay" and G. C. CAPRIULO presented "The seasonal importance of microzooplankton as grazers of primary productivity in Long Island Sound."

AWARDS

According to the Research Foundation's summary of its last fiscal year, the MSRC ranked second in number of proposals submitted by SUSB's 55 departments, and first in the number of awards received. The total value of MSRC's awards placed it 6th among all departments of the State University of New York at Stony Brook. MSRC scientists generated more than \$71,000 for each State funded full-time faculty member; best at SUSB.

Professors J. R. SCHUBEL, H. J. BOKUNIEWICZ, H. H. CARTER, and graduate student KAREN CHYTALO were awarded a grant by the New York Sea Grant Institute for a study of the contaminants, particularly PCB's and metals, in dredged materials and benthic organisms in Long Island Sound.

W. M. WISE and Professor J. R. SCHUBEL received an award from the New York Sea Grant Institute for phase 1 of a critical study of the pressures on New York's coastal zone from physical alterations such as dredging, bulkheading, and construction of groins and jetties.

GERARD M. CAPRIULO, graduate student, received an award from the American Museum of Natural History's Lerner Fund for Marine Research. The award is to support field work in his doctoral research on marine ciliates.

Professor HENRY J. BOKUNIEWICZ received a Sea Grant "starter grant" for a preliminary study of ground water flow across the floor of Great South Bay.

ELIZABETH MESSENGER, MSRC graduate student, has been awarded a three-year graduate fellowship from the National Science Foundation. Ms. Messenger will continue graduate work toward the PH.D. in oceanography at the University of Rhode Island.

Professors I. W. DUEDALL and L. A. CHUECAS received a grant from the Tinker Foundation for their project entitled: "Evaluation of Marine Pollution Processes Near Concepcion, Chile."

Professor J. R. SCHUBEL and DAVID J. HIRSCHBERG received a grant from NSF in support of their research to determine the importance of floods in sedimentation of the upper Chesapeake Bay.

Professor BOUDEWIJN BRINKHUIS received Sea Grant support to continue his studies of heavy metals mobilization by rooted aquatic plants.

The following MSRC graduates were elected as associate members of Sigma Xi:
D. SCOTT BECKER, GERARD M. CAPRIULO,
BRIAN E. DOYLE, GREGORY T. GREENE,
GARY S. GRUNSEICH, DAVID J. HIRSCHBERG,
JEFFREY A. LESLIE, GERALD L. LYNCH,
BARBARAJEAN MAGNANI, WAYNE F. PENELLO,
JEFFREY H. PARKER, SY F. ROBBINS, SUSAN Z.
ROBBINS, FRANK J. ROETHEL, JAMES D.
SELIGMAN, ANNE D. WILLIAMS, WILLIAM M.
WISE, CHRISTOPHER R. ZEPPIE.

Professors MALCOLM J. BOWMAN and WAYNE E. ESAIAS received a grant from the U.S. Coast Guard for the cost of preparing the book they are editing on oceanic fronts.

Professors RAMESH DAYAL and IVER W. DUEDALL were awarded a contract by NOAA to investigate the mobility of heavy metals in New York Bight Apex sediments during early diagenesis.

Professor J. R. SCHUBEL and Mr. CLIFFORD R. JONES will extend their study of Great South Bay sediments under a contract from the Nassau-Suffolk Regional Planning Board.

Professor PETER K. WEYL will undertake a statistical analysis of existing shellfish sanitation data under a contract with the New York Department of Environmental Conservation.

Professors H. H. CARTER and J. R. SCHUBEL received awards from the N.Y. ERDA and LILCO for refinement and application of their thermal effects model.

SERVICE

Professor EDWARD J. CARPENTER has accepted an invitation to serve on the Executive Committee of the Marine Pollution Research and Scientific Advisory Group for NOAA, and will attend the first meeting July 10-14 in Boulder, Colorado. This committee will advise NOAA on future research in U.S. Coastal waters.

Professor Carpenter was elected in June to be one of three Members-at-Large of the American Society of Limnology and Oceanography. He will begin his duties in June 1978 and will serve for a period of three years.

Professor J. L. McHUGH is serving on the Executive Committee of the Mid-Atlantic Fishery Management Council and attended meetings of that committee in Washington, D.C. on 5 April, Dover, Delaware on 28 April and in Philadelphia on 5 May 1978.

SOME RECENT PUBLICATIONS

AULD, A. and J. R. SCHUBEL. 1978. Effects of suspended sediment on fish eggs. *Estuarine and Coastal Marine Science* 6:153-164.

BIGGS, D. C., R. G. ROWLAND, H. B. O'CONNORS, JR., C. D. POWERS, and C.F. WURSTER. 1978. A comparison of the effects of Chlordane and PCB on the growth, photosynthesis, and cell size of estuarine phytoplankton. *Environmental Pollution* 15:253-263.

BOWMAN, M. J. 1978. Spreading and mixing of the Hudson River effluent into the New York Bight. *In* J. C. Nihoul, ed. *Hydrodynamics of Estuaries and Fjords*, Elsevier Oceanography Series No. 23, Amsterdam.

DENMAN, K., A. OKUBO and T. PLATT. 1977. The chlorophyll spectrum in the sea. *Limnology and Oceanography* 22:1033-38.

DOYLE, B. and R. E. WILSON. 1978. Lateral dynamic balance in the Sandy Hook to Rockaway Point transect. *Estuarine and Coastal Marine Science* 6:165-179.

LEKAN, J. and R. E. WILSON. 1977. Spatial variability of phytoplankton biomass in the surface waters of Long Island. *Estuarine and Coastal Marine Science* 6:239-251.

McHUGH, J. L. 1977. Rise and fall of world whaling: the tragedy of the commons illustrated. *Journ. International Affairs* 31:23-33.

McHUGH, J. L. 1977. Conference summary and comment. Pages 275-283 *in* Proc. Bi-State Conference on Chesapeake Bay, Chesapeake Research Consortium, Inc.

OKUBO, A. W. SAKAMOTO, T. INAGAKI, and T. KUROKI. 1977. Studies on the schooling behavior of fish--V. Note on the dynamics of fish schooling. *Bull. Japanese Society of Scientific Fisheries* 43:1367-1377.

POWERS, C. D., R. G. ROWLAND, H. B. O'CONNORS, Jr., C. F. WURSTER. 1977. Response to polychlorinated biphenyls of marine phytoplankton isolates cultured under natural conditions. *Applied and Environmental Microbiology* 34:760-764.

SCHUBEL, J. R. and B. C. MARCY, Jr. (eds.). 1978. *Power Plant Entrainment: A Biological Assessment*. Academic Press, New York, 271 p.

WILSON, R. E. 1976. Gravitational circulation in Long Island Sound. *Estuarine and Coastal Marine Science* 4:443-453.

ZANONI, A.E., W. J. KATZ, H. H. CARTER and R. C. WHALEY. 1978. An in-situ determination of the disappearance of coliforms in Lake Michigan. *Journ. Water Pollution Control Fed.* 50:321-330.

MAY GRADUATES

Three students completed requirements for the M.S. degree:

ROBERT E. ADLER, A Study of Fluorescent Whitening Agent for Tracing Sewage Effluent in the Marine Environment (Professor Duedall).

D. SCOTT BECKER, Evaluation of a Hard Clam Spawner Transplant Site Using a Dye Tracer Technique (Professor Carter).

GREGORY T. GREENE, Population Structure Growth and Mortality of Hard Clams at Selected Locations in Great South Bay (Professor McHugh).

WEYL ATTENDS POLICY FORUM

Professor P. K. WEYL attended a regional forum of the National Science Board (NSB) on public participation in science policy in Philadelphia on May 16. The NSB is the policy setting unit for NSF with its members appointed by the President. Weyl attended the panel on water and marine resources. The panel communicated three concerns of MSRC to the National Science Board.

1. The need for research to develop more effective and efficient environmental monitoring.
2. The problem of evaluation of multi-disciplinary research proposals. These fall between the missions of the various offices in NSF and specialist reviewers often feel that projects that attempt a broad synthesis should not be initiated until most of the problems in their specialty have been solved. Meanwhile, effective environmental management must make use of simplified models, which could be significantly improved by broad multi-

disciplinary research.

3. There is a need for contingency funds that can be made available rapidly, to exploit natural experiments. Rare events such as major hurricanes, large accidental discharges of pollutants and extreme climatic deviations can have large impacts on the environment. Specific funds at NSF should be set aside for such opportunities under the direction of a top administrator, who has authority to respond rapidly. He should be able to commit funds to initiate studies by phone and then send a representative to the scene to evaluate their scientific merit and determine the resources that should be allocated.

NEW COURSE FOR FALL SEMESTER

Professor D. F. SQUIRES will offer a new course, "Marine Coastal Policy," this fall under MAR.550.



Professors I. W. Duedall and R. Dayal prepare to place blocks of stabilized coal wastes in Conscience Bay as part of study supported by NYERDA.



Aerial view of shrimp boats in Corpus Christi Bay (Texas) showing trails of sediment suspended by their weighted nets. MSRC scientists have shown that each year shrimpers resuspend 10-100 times as much sediment as is dredged for channel maintenance.



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