

**LDIR#145**

**OCEANOGRAPHY**

**1967-1968**

DIRECTOR'S

JUN 16 1967

NATIONAL SCIENCE FOUNDATION

OFFICE OF THE DIRECTOR

WASHINGTON, D.C. 20550

June 8, 1967

IMPORTANT NOTICE

to

PRESIDENTS OF UNIVERSITIES AND COLLEGES

Subject: THE NATIONAL SEA GRANT PROGRAM

On October 15, 1966, the President signed Public Law 89-688, the NATIONAL SEA GRANT COLLEGE AND PROGRAM ACT, for the purpose of accelerating national development of marine resources through support and encouragement to academic institutions, research institutes, and laboratories. In order to accomplish the purposes of the Act, the National Science Foundation has established two related programs under a new Office of Sea Grant Programs: a program of *Sea Grant College* support, and a program for support of specific *Sea Grant Projects*.

*Sea Grant College* support will be focused in institutions engaged in broad-based marine resources programs that include research, education, and advisory services. Such institutions should provide leadership and scientific and technological resources for marine activities within their regions.

A *Sea Grant Project* will be a single, well-defined research, study, design, education, advisory, or training activity expected to produce information, techniques, methods, or systems applicable to marine resources in any field, or to train manpower required for marine resource exploitation.

More detailed descriptions of *Sea Grant College* and *Sea Grant Project* support are given starting on page 2.

GENERAL CONSIDERATIONS

The National Sea Grant College and Program Act was passed to augment other important legislation designed to accelerate effective utilization of marine resources. The intent is to supplement and expand other Federal activities through three major categories of effort:

—Research directed toward accumulation of knowledge necessary for development and beneficial exploitation of marine resources.

—Training, at all levels, of manpower required for marine resource development and exploitation.

—Advisory services for communicating to natural and social scientists, technologists, industrialists, businessmen, and the general public, information related to marine resource development and utilization.

These major categories provide a broad framework through which support may be granted for nearly any important aspect of marine resource development, including aspects not ordinarily funded through other sources, such as considerations of law, economics, sociology, and business and public administration. However, the primary purpose of the National Sea Grant Program is to advance the state of ocean technology through the application of science and engineering to problems of resource development, through dissemination of useful information, and through the training of professional and technical specialists.

Through existing academic institutions and research institutes, as many elements of the nation and of society as may be possible and appropriate will be involved to ensure that the Sea Grant Pro-

Sea Grant College Program

- Steel Corp, 60; Callahan Mining Corp, 61; instr. geol, Carleton Col, 62-63; Stanford, 63-64; GEOLOGIST, U.S. GEOL. SURV, 64- Consult. geologist, 62-64. Soc. Econ. Geol; Mineral. Soc; Geol. Soc. Geology of metaliferous mineral deposits; mineralogy and geochemistry of sulfide and oxide ores; iron deposits and gold-silver deposits of the western states; mineral exploration. Address: U.S. Geological Survey, 345 Middlefield Rd, Menlo Park, Calif. 94025.
- RADTKE, DR. DOUGLAS D(EAN)**, b. New London, Wis, Nov. 6, 38; m. 62; c. 2. PHYSICAL CHEMISTRY. B.S, Wis. State, Stevens Point, 61; Ph.D. (phys. chem), Wisconsin, 66. ASST. PROF. CHEM, WIS. STATE, STEVENS POINT, 66- U.S.A.F, 56-58. Chem. Soc. Molecular orbital calculations for transition metal complexes; molecular orbital description of magnetic resonance spectra for inorganic complexes. Address: Dept. of Chemistry, Wisconsin State University, Stevens Point, Wis. 54481.
- RADTKE, DR. SCHRAGE FRED**, b. Minneapolis, Minn, Aug. 21, 19; m. 42; c. 2. INORGANIC CHEMISTRY, METALLURGY. B.S, Mass. Inst. Tech, 40, U.S. Rubber Co. fel, 48-49, Ph.D.(chem), 49. Teaching fel, Mass. Inst. Tech, 40-41, 46-49; tech. asst. to v.pres. & gen. Mgr, N.C. Shipbldg. Co, N.C, 41-42; res. supvr, pigments dept, E.I. du Pont de Nemours & Co, Del, 49-53; dir, metall. res. labs, Reynolds Metals Co, Va, 53-58; EXEC. V.PRES. & DIR. RES, INT. LEAD ZINC RES. ORG, INC, 58- U.S.A, 42-46. AAAS; Soc. Metals; Inst. Min, Metall. & Petrol. Eng; Inst. Elec. & Electronics Eng; Ord. Assn; Chem. Soc; Inst. Chem; Assn. Iron & Steel Eng; Ceramic Soc; Mgt. Assn; Soc. Corrosion Eng; Welding Soc; Electrochem. Soc; Ming. Cong; Rwy. Eng. Assn; Soc. Automotive Eng; Soc. Die Casting Eng; N.Y. Acad. Sci; Brit. Inst. Metals. Rare metals. Address: International Lead Zinc Research Organization, Inc, 292 Madison Ave, New York, N.Y. 10017.
- RADUE, R(OBERT) W(ILLIAM)**, b. Milwaukee, Wis, Feb. 11, 18; m. 40; c. 3. ORGANIC CHEMISTRY. B.S, Wisconsin, 39, M.S. 50. Anal. chemist, MONSANTO CO, 39-41, res. chemist, 41-54, RES. GROUP LEADER, 54- AAAS; Chem. Soc. Process development and organic synthesis; fine and intermediate organic chemicals; food ingredients; research administration. Address: Monsanto Co, 1700 S. Second St, St. Louis, Mo. 63177.
- RADWAN, DR. M(OHAMED) A(HMED)**, b. Dakahlia, Egypt, Apr. 16, 26; nat; m. 57. PLANT PHYSIOLOGY. B.Sc, Fouad, Egypt, 46; M.S, 50; Ph.D.(plant physiol), California, 56. Asst. lectr. chem, Cairo, 47-52, lectr. plant physiol, 56-57; sr. lab. technician, California, 57-58; instr. chem, Sacramento City Col, 58-60; PLANT PHYSIOLOGIST, U.S. FOREST SERV, 60- Chem. Soc; Soc. Plant Physiol; Bot. Soc; Weed Soc; Soc. Am. Foresters. Metabolism; translocation; pesticides. Address: U.S. Forest Service, Olympia, Wash. 98501.
- RADZIKOWSKI, SISTER M. ST. ANTHONY, L.H.M**, b. Jermyn, Pa, Mar. 10, 19. INORGANIC CHEMISTRY. A.B, Marywood Col, 39; Catholic Univ, summers, 49-50; M.S, Notre Dame, 57, Atomic Energy Cmn. fel, 60, Ph.D.(chem), 61. Teacher, parochial sch, Pa, 45-55; dean women, MARYWOOD COL, 55-58, CHMN. CHEM. DEPT, 61- Chem. Soc. Complexes of methyl esters of proline and sarcosine; infrared spectra of coordination compounds of amines with metal halides; spectroscopic studies of reactions with organic donor compounds. Address: Dept. of Chemistry, Marywood College, 2300 Adams Ave, Scranton, Pa. 18509.
- RADZIMOVSKY, PROF. EUGENE (VAN)**, b. Severinovka, Ukraine, Dec. 4, 05; nat; m. 33; c. 1. MECHANICAL ENGINEERING. B.S, Polytech. Inst, Ukraine, 26, dipl, 27, M.S, 37; Dr.Tech.Sci, Munich, 47. Sr. researcher & head dept, inst. eng. mech, Acad. Sci, Ukraine, 35-41; from asst. prof. to assoc. prof, MECH. ENG, ILLINOIS, URBANA, 50-58, PROF, 59- Consult, 47-50, 56- Soc. Mech. Eng; Soc. Eng. Ed. Machine design; lubrication; engineering mechanics; stress analysis. Address: Dept. of Mechanical Engineering, University of Illinois, Urbana, Ill. 61801.
- RAE, JAMES A(LEXANDER)**, b. Barre, Vt, Aug. 18, 16; m. 44; c. 3. ORGANIC CHEMISTRY. A.B, Maryville Col.(Tenn), 40; M.S, Michigan, 46. SR. CHEMIST, ESSO RES. & ENG. CO, STANDARD OIL CO. N.J, 46- U.S.N, 42-45. Analytical methods; rubber chemistry. Address: Esso Research & Engineering Co, P.O. Box 45, Linden, N.J. 07036.
- RAE, DR. JAMES J(AMIESON)**, b. Toronto, Ont, Can, Jan. 25, 08; m. 33. ORGANIC CHEMISTRY. B.A, McMaster, 30; M.A, Toronto, 31, Ph.D, 33. Asst. dept. med. res, Banting Inst, Toronto, 30-33; 1851 Overseas fel, Lister Inst. Prev. Med, London, 33-34; prof. chem, Brandon Col, 34-37; from lectr. to ASSOC. PROF. GEN. & ORG. CHEM, TORONTO, 37- Fel. Chem. Inst. Can. Phosphorus metabolism; saliva. Address: Dept. of Chemistry, University of Toronto, Toronto 5, Ont, Can.
- RAE, DR. JOHN, JR**, b. Glen Ridge, N.J, Feb. 17, 17; m. 42; c. 4. ANALYTICAL CHEMISTRY. B.S, Rollins Col, 40; M.S. & Ph.D.(anal. chem), Wisconsin, 43. Mem. staff, subtrop. fruit tres. sta, Nat. Bur. Agr, Fla, 38-39; asst. chem, Wisconsin, 40-42; chemist, SHELL DEVELOP. CO, Calif, 43-47, TEX, 47-56, SR. CHEMIST, 56- Chem. consult, 40-43. Award, U.S. Navy, 44. AAAS; Chem. Soc. Spectrophotometry applied to the determination of acidity and color density. Address: Shell Development Co, P.O. Box 2099, Houston, Tex. 77001.
- RAE, DR. K(ENNETH) M(acFARLANE)**, b. Harwich, Eng, Jan. 15, 13; m. 46; c. 1. BIOLOGICAL OCEANOGRAPHY. B.Sc, London 35, Leverhulme fel, 35-41, Fulbright grant, 51-52, Ph.D.(zool), 58. Head dept. oceanog, Univ. Col, Hull, 48-50; officer in charge, Edinburgh Lab, Scottish Marine Biol. Assn, 50-57; prof. biol. oceanog. & dir. marine labs, Agr. & Mech. Col. Tex, 57-61; prof. marine biol. & dir. inst. marine sci, ALASKA, 61-65, V.PRES. RES. & ADV. STUDY, 63- Brit. Army, 41-46. Soc. Limnol. & Oceanog. (ed, jour, 59-63); Inst. Fishery Res. Biol; fel. Royal Soc. Edinburgh; Scottish Marine Biol. Assn.(ed, jour, 48-57). Marine ecology; plankton; fisheries. Address: University of Alaska, College, Alaska 99701.
- RAE, RANDOLPH S**, Physics, see 10th ed, Phys. & Biol. Vols.
- POULTRY SCIENCE**. B.S, Manitoba, toba, 24-26, lectr, 26-29; asst. prof. head dept. poultry, 42-65, prof, 42-66. Genetic Assn; Poultry Sci. Assn; Agr. production; body conformation in bro Science, University of Saskatchewan,
- RAE, WILLIAM H, JR**, b. Tacoma, Wa, ICS. B.S, Washington (Seattle), 53, WASHINGTON (SEATTLE), 59-66, NAUT. & ASTRONAUT, 65- U.S.A.F. naut. Aerodynamics of vertical and wind tunnel testing problems. Address of Washington, Seattle, Wash. 98105.
- RAE, DR. WILLIAM J**, b. Buffalo, N.Y. ICAL ENGINEERING, AERODYNAMICS 50-55; Ph.D.(aeronaug. eng), Cornell, Inc, 50-53, jr. mathematician, 53-54, Cornell Univ, 55-59, res. aerodynamic INC, 59-63, prin. aerodynamicist, 63 Mt. St. Joseph Col.(N.Y.), 61- Inst. interference; viscous acoustics; bound shock-wave propagation in solids. A P.O. Box 235, Buffalo, N.Y. 14221.
- RAEDER, DR. ARTHUR**, b. Brooklyn, D.D.S, N.Y. Univ, 37. Instr. orthod; RES, PAN-AM. MED. ASN, 60- Dir, mem, oral health cmt, Greater New Presidential citation, 45. Dipl. Am. Orthod; N.Y. Acad. Sci. Orthodontics with malocclusions and facial deformity 615 Eastern Pkwy, Brooklyn, N.Y. 11
- RAEDER, J(OHN) MILFORD**, b. Wilkes PLANT PATHOLOGY. B.S, Iowa State Barberrry scout, U.S. Dept. Agr, Iowa PLANT PATH, Iowa State Col, 20-21 prof, 31-55, prof, 55-60, EMER. PRG sta, Idaho, 21-27, assoc. plant pathol Med.C, U.S.A, 18-19. AAAS; Phytopa and clover mosaic; cereal pathology Pathology, University of Idaho, Mosco
- RAEDER, DR. OSCAR J(ACOB)**, Psych
- RAEDER, PROF. WARREN**, b. St. Lou ENGINEERING. B.S, California, 16; COLORADO, 26-28, asst. prof, 28-32 dept, 43-59, EMER. PROF, 59- Vis. 61. Engr, City of St. Louis; Colo. Sta Soc. Civil Eng; Soc. Eng. Ed; Concrete Colo. 80302.
- RAE-GRANT, DR. QUENTIN A**, b. Abbe zen; m. 55; c. 2. PSYCHIATRY. M. med, London, 58. Intern med. & sur; 54; Maudsley Hosp, London, Eng, 55- St. Louis, Mo, 58-60; Instr. pediat. & hosp, 60-61; dir. ment. health div, St chief soc. psychiat. sect, community HEALTH, 65-66, DIR. & CHIEF MEN ASST. PROF. PSYCHIAT, HOPKINS, 62-64; lectr, sch. nursing, St. Louis, & Rosewood State Hosp, Md, 60-61; Psychiat. Assn; Orthopsychiat. Assn. patterns of psychiatric service; eval psychiatry; school mental health ser Mental Health Study Center, 2340 Un
- RAEMER, PROF. HAROLD R**, b. Chic ICES, ELECTRICAL ENGINEERING. (physics), 59. Asst. math, Indiana, 4 physicist, res. labs, Bendix Aviation sr. engr, Cook Res. Labs, Ill, 55-57, Ill. Inst. Tech, 60; sr. eng. specialist Systs. Gen. Tel. & Electronics Corp, NORTHEASTERN, 63-66, PROF, 66- vard, 62; consult, Sylvania Appl. Res Phys. Soc; sr. mem. Inst. Elec. & El wave propagation theory; statistical particularly wave propagation in plas neering, Northeastern University, 36
- RAESE, DR. JOHN THOMAS**, b. West AGRONOMY, PLANT PHYSIOLOGY. (grass mgt), Maryland, 63. Instr. ag high sch, Md, 62-63; RES. PLANT P VESTS, AGR. RES. SERV, U.S. DEP. Soil Sci. Soc. Am; Int. Soc. Soil Sci; of soils and plant tissues; pasture and nutritional studies of the tung tree. Investigations, P.O. Box 758, Bogalu
- RAFSIDE, PROF. J(AMES) (INGLIS)**, m. 54; c. 4. PHYSIOLOGY. B.Sc, G 54. Sr. lectr. animal physiol, New 58; ASSOC. PROF. PHYSIOL, ONT. tist, Karolinska Inst, Sweden, 64-65. Can. Soc. Study Fertil; Brit. Soc. Stu

West Coast Laboratories (continued)

International Pacific  
 Headquarters  
 Fishery Research Laboratories  
 Seattle, Washington 98105  
 (1925, I, O)

Applied Physics Laboratory  
 University of Washington  
 1013 North East 40th Street  
 Seattle, Washington 98105  
 (S, C)

Bu. of Commercial Fisheries

Exploratory Fishing & Gear  
 Research Base  
 272 Montlake Boulevard  
 Seattle, Washington 98102  
 (F, C&O)

Biological Laboratory  
 272 Montlake Boulevard  
 Seattle, Washington 98102  
 (1930, F, C&O)

Mammal Biological  
 Laboratory  
 San Point Naval Air  
 Station  
 Seattle, Wash. 98115  
 (F, C&O)

Washington Department of  
 Fisheries  
 Research Laboratories:

Headquarters:

Room 115  
 General Administration Bldg.  
 Olympia, Washington 98502  
 (1963, S, C)

Washington Department of  
 Fisheries  
 Research Labs. (continued)

Branches:

State Shellfish Laboratory  
 Star Route 2  
 Brinnon, Washington 98320  
 (1952, S, C&O)

Coastal Research Lab.  
 401 West Wishkah  
 Aberdeen, Washington 98520  
 (1951, S, C)

Columbia River Laboratory  
 1408 Franklin Street  
 Vancouver, Washington  
 98660  
 (1948, S, C)

Willapa Bay Oyster Lab.  
 Box 158  
 Ocean Park, Wash. 98640  
 (1945, S, C&O)

University Laboratory  
 College of Fisheries - M2  
 University of Washington  
 Seattle, Wash. 98105  
 (1932, S, C)

Biological Station  
 Walla Walla College  
 Anacortes, Washington  
 (1947, U, C)

Alaska Dept. of Fisheries  
 P.O. Box 350  
 Juneau, Alaska  
 (1954, S, C)

Bu. of Commercial Fisheries

Biological Laboratory  
 P.O. Box 155  
 Auke Bay, Alaska 99821  
 (1956, F, C&O)

West Coast Laboratories (continued)

Bu. of Commercial Fisheries  
 (continued)

Exploratory Fishing &  
 Gear Research Base  
 P.O. Box 2481  
 Juneau, Alaska 99801  
 (1960, F, C&O)

Alaska Dept. of Fish. & Game  
 Kitoi Bay Research Station  
 Kodiak, Alaska  
 (S, C)

Pacific Islands Laboratories

Hawaii Marine Laboratory  
 University of Hawaii  
 Honolulu 14, Hawaii  
 (1951, U, C)

Bu. of Commercial Fisheries  
 Biological Laboratory  
 P.O. Box 3830  
 Honolulu, Hawaii 96812  
 (1949, F, O)

Division of Fish & Game  
 Dept. of Land & Natural Resources  
 400 S. Beretania Street  
 Honolulu, Hawaii 96813  
 (S, C)

Institute of Marine Science  
 University of Alaska  
 College, Alaska  
 (1961, U, C)

Arctic Research Laboratory  
 Point Barrow, Alaska 99723  
 (1947, F, C&O)



Institute of Marine Science

University of Alaska

*Annual Report*

1966

OREGON  
STATE  
UNIVERSITY'S

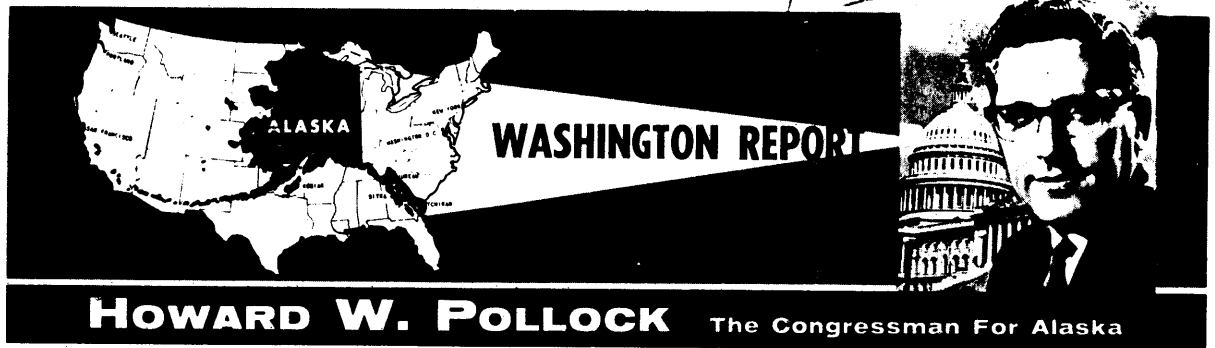
*Woods Hole, Oceanographic  
Columbia  
U.S. Navy  
U. of Miami  
Tex A&M  
Jacks I of O graphy  
G.S.  
U. of W*

# MARINE SCIENCE CENTER

WELCOMES YOU



Newport, Oregon



1507 HOUSE OFFICE BUILDING - WASHINGTON, D.C. 20515 - TELEPHONE: CODE 202 225-5765

(NOT PRINTED AT GOVERNMENT EXPENSE) 

Vol. 90-1-4

April, 1967

My dear friends and fellow Alaskans,

### OCEANOGRAPHY

Recently it was my good fortune to be selected by the Chairman of the Merchant Marine and Fisheries Committee to represent the Committee at an Oceanography Symposium sponsored by the American Society for Oceanography. The Symposium was conducted in Houston, Texas.

The field of oceanography is a vital one for Alaska and the world. Accelerated research and exploration in this area will greatly aid our state by making possible the increased use of our vast marine resources. The critical world food shortage emphasizes the importance of this work. Even the once huge American food surplus has dwindled to less than a year's supply. We must turn to the sea to feed the world's ever-increasing population.

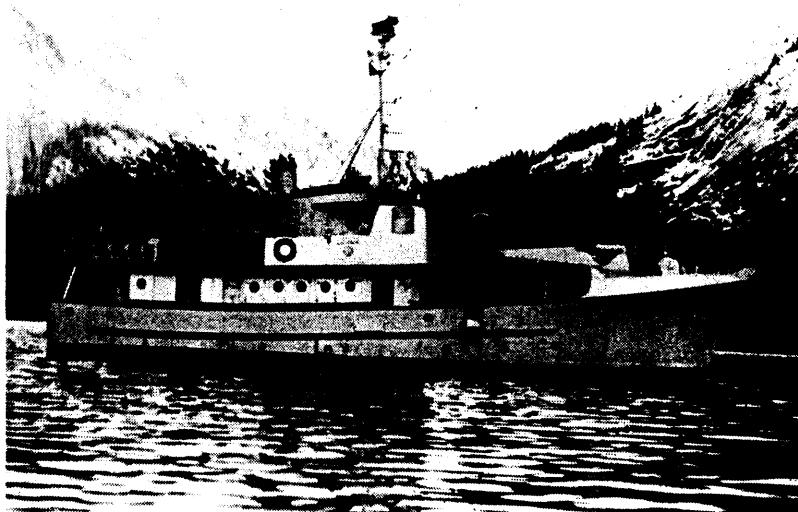
One of the most exciting developments in this field was the passage last year of the National Sea Grant College and Program Act. This law provides funds to institutions which can develop regional training centers in the area of ocean resources and for individual research programs. The University of Alaska has an excellent opportunity to participate in these programs and has already expressed an interest. With 54% of the general coastline of the United States and 64% of the continental shelf, Alaska is the logical place to establish a Sea Grant College. Our state must take the lead in utilizing these resources. Governor Hickel and the Legislature, realizing this, have established a State Commission on Oceanography.

UNIVERSITY OF ALASKA



INSTITUTE OF  
MARINE SCIENCE

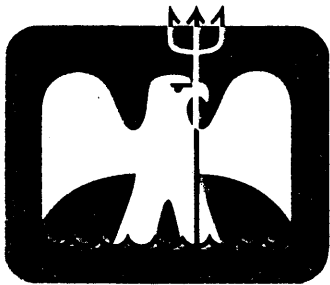
# A GUIDE *to the* R/V ACONA



The R/V (Research Vessel) Acona is an oceanographic vessel operated for research and training in Alaskan coastal waters by the Institute of Marine Science at the University of Alaska. She is pictured here "on station" in Endicott Arm, a glacial fjord southeast of Juneau.

## THE ACONA IN BRIEF

Length .....	80 feet
Tonnage .....	154 tons
Speed .....	8 knots
Range .....	5000 miles
Main Engines .....	300 H.P.
Quarters .....	15 crew and scientists
Original Cost .....	\$300,000



# NATIONAL OCEANOGRAPHY ASSOCIATION NEWS

1900 L STREET, N. W.

WASHINGTON, D. C. 20036

Vol. I, No. 10

HARRY DAVID, *Editor*

June — July 1967

## MIDDLE EAST OIL CRISIS CALLS FOR GREATER OCEAN INVOLVEMENT

The ocean and the surface below the ocean took on added significance in recent weeks as sources of oil and other raw materials.

Worried government officials and industrialists in Britain, other European countries, and even Japan, kept a sharp eye on the Middle East, from which they received large quantities of oil before the Arab-Israeli conflict. Suddenly, a once-certain source of supply had, at best, become a doubtful one. The U.S., too, was deeply concerned. Assistant Secretary of the Interior J. Cordell Moore said:

"Disruption of Middle Eastern oil supplies . . . has led me to conclude a petroleum emergency exists which threatens the broad security of the U.S."

While the spotlight was on oil, the Mideast crisis also forced a re-examination by both government and industry of the dependability of other foreign raw material sources. In the light of recent events, it became once again obvious that troubles abroad could threaten American production lines and military security.

The ocean—and oceanography—thus emerged as a more significant factor in the future economic and military security of the U.S. If the potential of the ocean can be converted into reality, then U.S. industry and the military can plan without worrying about foreign sellers' whims.

Discussing this potentially significant possibility, NOA's executive director, Carlton B. Hamm, recently said in a statement to the press:

"The need to step up our search for oil and other critical raw materials closer to home, and particularly in that largest untapped reservoir of all—the ocean—was dramatically brought to the attention of the American public by the Middle East conflict.

"If we are to correct a situation which led Assistant Secretary of the Interior, J. Cordell Moore to say 'a petroleum emergency exists which threatens the broad security interests of the U.S.,' then we must not only accelerate our search for critical raw materials in the ocean, but we must develop the technical know-how of working in the ocean at a faster rate than the present.

"The American oil industry has already made great strides in its attempts to obtain oil from the ocean bottom. In view of recent international events, it will probably increase its involvement in ocean work. Other industries are working in the ocean or planning to do so. But an even greater involvement by American industry is urgently needed and needed now.

"Offshore oil production has importantly added to the oil reserves this country has. Without that ocean-centered production we might face the possibility of oil shortages which now confront Britain and other European countries as well as Japan, if anti-Western oil embargoes by

*(Continued on Page 2)*



## In Washington

### Looking Ahead:

#### **Big Boost in Ocean Budget?**

A member of the President's Commission for Marine Science, Engineering and Resources said recently that the future national oceanographic program may well call for a Federal oceanographic budget of \$12 to \$15 billion annually.

This revealing look into the future came during a question-and-answer period at a meeting of the Society of the Plastics Industry conference at San Diego.

In a statement to the NOA NEWS, Commission Member **George H. Sullivan** added:

"My estimate includes . . . the engineering and systems required to effectively replenish our merchant marine, modernize our ports and docks, reclaim and preserve our beaches, handle problems of pollution, and accomplish other ocean tasks so long neglected."

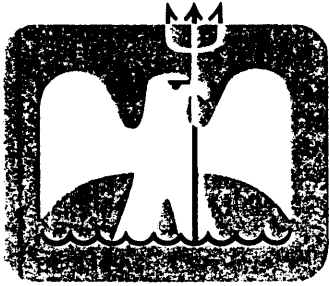
### National Marine Council Roundup:

#### **PEOPLE AND PLANS**

**Dr. Hugh J. McLellan**, formerly of the Geophysics Branch of the Office of Naval Research, recently joined the staff of the National Council on Marine and Engineering Development. Before coming to the Office of Naval Research three years ago, Dr. McLellan was a professor of oceanography at Texas A & M University.

Two other appointees have joined the professional staff recently: **Norman Wilimovsky**, a marine biologist, on leave from the In-

*(Continued on Back Page)*



# NATIONAL OCEANOGRAPHY ASSOCIATION NEWS

1900 L STREET, N. W.

WASHINGTON, D. C. 20036

Vol. 1, No. 9

HARRY DAVID, *Editor*

May, 1967

## Where We Stand:

### NOA "STRONGLY OPPOSES" UNITED NATIONS TAKE-OVER OF OCEAN MINERALS

NOA strongly opposes conferring title to mineral resources on the Ocean floor to the U. N.

A suggestion to give the U. N. such title was made recently by Sen. Frank Church (D.-Idaho), who is also a U. S. representative to the 21st General Assembly of the U. N. The NOA NEWS reported Sen. Church's statement (Feb. 1967 issue), and printed reactions to it (March 1967 issue).

NOA's Board of Directors, meeting at New Orleans last month (see: *Report from NOA*, P. 2) officially put NOA on record as strongly opposing any move that would place mineral resources on the ocean floor under the control of that international body.

## INSIDE THE NEWS

See also: "Report from NOA: Progress, Programs & Plans," and "No Ocean Give-Away: Rep. Rogers Proposes U.S. 'Doctrine of the Sea'" on inside pages.

"The granting of lease rights," the Board declared, "to the deep ocean mineral resources presents varied and complex problems which the United Nations was not created to manage."

The Board rejected Sen. Church's principal reason for injecting the United Nations into this area: to have these mineral resources serve as a source of revenue for the U. N.

In the Board's opinion, "giving the U. N. an independent source of income and international police powers, as implied in the suggestion, raises issues warranting the most serious consideration of the United States Congress."

The Board statement concluded:

"At this time there appears to be no deterrent to oceanic mineral resources development which would be removed by Senator Church's suggestion. It is recognized, however, that future technical developments eventually may lead to the necessity of an extension and refinement of existing international agreements pertaining to great ocean depths.

"There are some competent authorities who believe that in the long run a general agreement on the allocation of these mineral resources may be necessary. However, at present our knowledge is limited about the extent of the resources, the means of gaining access to them, the conditions for processing and marketing them, and how activities connected with their extraction will affect other uses of the sea. Furthermore, we cannot now predict the international situation that will exist at the time this knowledge is gained. Until the whole issue is analyzed intensively on a national basis,



## In Washington

### ESSA Picks Miami Sites For Institute for Oceanography

Acting Secretary of Commerce A. B. Trowbridge announced recently that the Environmental Science Services Administration had chosen Miami, Florida, as the site for its East Coast Oceanographic Research Facility. ESSA's Institute for Oceanography, headed by Dr. Harris B. Stewart, Jr., will move its headquarters there, together with the Marine Geology and Geophysics Laboratory, the Physical Oceanographic Laboratory, and the Sea-Air Interaction Laboratory.

The new laboratory will be built on Virginia Key, in Biscayne Bay, in close proximity to the Miami Seaquarium, the Tropical Atlantic Biological Laboratory of the Bureau of Commercial Fisheries, and the Institute of Marine Science of the University of Miami.

There will also be a ship base located on property developed by the Port of Miami, at Dodge Island, about seven miles from Virginia Key.



## Congressional Record

PROCEEDINGS AND DEBATES OF THE 90<sup>th</sup> CONGRESS, FIRST SESSION

Vol. 113 WASHINGTON, WEDNESDAY, MAY 10, 1967 No. 73

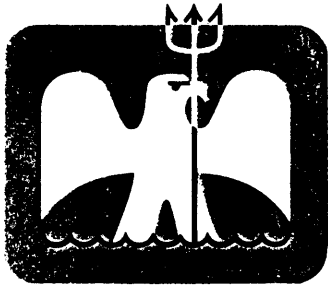
### HIGHER EDUCATION COURSES IN OCEANOGRAPHY

Mr. FONG. Mr. President, the National Oceanography Association, . . . has just issued an important publication called Oceanography Curricula. . . .

The National Oceanography Association has performed a real service by issuing that publication at this time. I have been aware of NOA since its inception in the summer of 1966. It came into being when such an organization was badly needed to give leadership and direction to the mushrooming field of oceanography. I have watched it grow in strength and stature over the past 10 months.

(Excerpts from a statement by Sen. Hiram L. Fong, of Hawaii.)

(Continued on Back Page)



# NATIONAL OCEANOGRAPHY ASSOCIATION NEWS

1900 L STREET, N. W.

WASHINGTON, D. C. 20036

Vol. 1, No. 6

DR. JOHN LYMAN, *Editor*

February, 1967

## **Big Step Forward:**

### **NOA ISSUES FORMAL POLICY STATEMENT — A SEVEN-POINT PROGRAM COVERING MAJOR OCEANOGRAPHY AREAS**

NOA's Board of Directors this month approved a seven-point Statement of Policy as a formal guide for the organization's activities.

The areas the statement covers are: scientific investigation, communication between government and industry, marine food production, marine mineral resources, petroleum, recreation, and pollution and waste control.

This sweeping program is in line with NOA's avowed aim of promoting the "optimum development of the ocean for the benefit of mankind generally and the United States in particular," as specified in its Statement of Purpose (see box below).

"The Board's action is very timely," Carlton B. Hamm, NOA executive director, declared. "This year will see some substantial breakthroughs in oceanographic activities, both in industry and government. (For a report on Federal budget figures for oceanography, see article on p. 4). With this Statement of Policy NOA, not yet a year old, has taken a big step forward. The Board's agreement on goals is highly significant. For NOA's

#### **NOA: Statement of Purpose**

*The National Oceanography Association has for its general purpose the promotion of the understanding and optimum development of the ocean for the benefit of mankind generally and the United States in particular. The maximum benefit will result from the multiple use of the surface, the water itself, the surface of the earth beneath the water, and the rocks at depth. These multiple uses should be balanced in such a way as to optimize their benefits.*

*NOA seeks to implement this broad objective by encouraging and fostering appropriate action by all interested groups, including industrial, governmental, and academic, working separately and in concert, for the achievement of practical benefits from specific ocean uses.*

Board includes a broad spectrum—representatives of the public, industry, the academic world, and the communications media. As a result, NOA is now in the strongest possible position to provide leadership for, and pull together, the many components—public, industrial, and academic—which make up the U.S. oceanographic community. Every citizen has a stake in the beneficial development of the ocean; ocean-use is everybody's business."

Section by section, here are highlights from NOA's Statement of Policy:

#### **1. Scientific Investigation**

Calling the need for greater knowledge of the ocean environment "critical," NOA's Policy Statement says that "benefits from increased support of scientific research can be expected in a number of important areas." Among these areas are food chains, marine botany, environmental studies, air-sea interaction, human habitation, benthic studies, and sediments. These

*(Continued on page 2)*



## **In Washington**

### **President Johnson Announces Membership of Marine Science Commission**

The President has announced the appointment of the Commission on Marine Science, Engineering and Resources, pursuant to Public Law 89-454, the Marine Resources and Engineering Development Act of 1966. The Act provides for a 15-member commission "including individuals drawn from Federal and State governments, industry, universities, laboratories and other institutions engaged in marine scientific or technological pursuits."

Dr. Julius A. Stratton, former President of the Massachusetts Institute of Technology and since 1966 Chairman of the Board of the Ford Foundation, was named Chairman of the Commission.

Designated Vice Chairman was Dr. Richard A. Geyer, head of the Department of Oceanography, Texas A & M University. Until 1966, Professor Geyer was Technical Director for Oceanography of Texas Instruments, Inc. He was also formerly head of oceanography for the Humble Oil and Refining Company.

From state and federal agencies, four members were named. They are David Adams, Chief of Commercial and Sport Fisheries for North Carolina; Under Secretary of the Navy Robert H. B. Baldwin; Dr. Robert M. White, Administrator of ESSA; and Frank C. DiLuzio, Assistant Secretary of the Interior for Water Pollution Control.

Besides the chairman and vice chairman, university representation includes Dr. James Crutchfield, Professor of Economics (Fisheries) at the University of Washington, Seattle; Dr. Carl Auerbach, Professor of International Law at the University of Minnesota, Minneapolis, Minn., and Dean John Knauss of the University of Rhode Island School of Oceanography, Kingston, R. I.

Industrial representatives include John H. Perry of Palm Springs, Florida, President of Perry Publications and developer of the Perry

*(Continued on Back Page)*



**MOSS LANDING MARINE LABORATORIES  
MOSS LANDING, CALIFORNIA**

*a cooperative  
facility of the  
california  
state colleges at  
fresno  
hayward  
sacramento  
san francisco  
joe*

# LAND'S ENDING MARINE LABORATORIES OF THE CALIFORNIA STATE COLLEGES

For marine sciences and technology in the United States, 1966 was a turning point, as the federal government plunged into a program in marine resources and engineering development.

In June, Congress enacted the Marine Resources and Development Act, which expressed for the first time a national policy of intensive study of the sea and to develop resources of the ocean and of the marine environment more effectively. In fulfillment of this policy, the Act created a National Council on Marine Resources and Engineering Development, chaired by Vice President Hubert H. Humphrey.

In October, Congress enacted the National Sea Grant College and Program Act for the purpose of "initiating and supporting programs of education and research in the various fields relating to the development of marine resources."

Franklin D. Roosevelt Foundation and to support its last report on marine resources, "Marine Science: A Year of Transition," published in 1967, and announced by recommending an overall program of \$1 billion to develop a national marine program. We are certain about the following call for our action:

Our programs can help us meet many of the national and world needs of today. A marine program must be developed to meet the following needs:

1. To provide a national marine program to meet the needs of the United States and the world.

2. To provide a national marine program to meet the needs of the United States and the world.

3. To provide a national marine program to meet the needs of the United States and the world.

4. To provide a national marine program to meet the needs of the United States and the world.

The sea is a new environment for man's exploration and development, just as crossing the West was a challenge in centuries past. We shall encounter the environment with the same passion and pioneer spirit that propelled ships from the Old to the New World.

It is our challenge to the ocean depths — a challenge to the challenge of outer space — a challenge to work with all nations to develop the sea for the benefit of mankind.

COURSE DESCRIPTIONS: MOSS LANDING MARINE LABORATORIES Fall term, 1967

NOTE: Most courses meet all day on the day scheduled.

- ML 101 GENERAL OCEANOGRAPHY. An interdisciplinary examination of physical and chemical characteristics of seawater, distribution and effects of ocean currents, geology of the ocean floor, and relations of organisms to the marine environment. Prerequisites: college chemistry and biology. (lecture 3 hours, lab & field 3 hours)  
Thursday--4 units--Dr. Arnal
- ML 111 ZOOLOGY OF MARINE VERTEBRATES. A field-oriented study of natural history, ethology, physiology, identification, and systematics of vertebrates living in or associated with marine, estuarine, and shore communities; emphasis upon inter-relationships of organisms within these environments. Prerequisite: college zoology or equivalent. (lecture 2 hours, lab & field 6 hours)  
Wednesday--4 units--Dr. Harville
- ML 121 MARINE INVERTEBRATE ZOOLOGY. A field-oriented study of adaptations and responses of invertebrate animals to their marine and estuarine habitats, and inter-relationships of organisms within these environments. Emphasis on field observation, collection, identification, and systematics. Prerequisite: college zoology or equivalent. (lecture 2 hours, lab & field 6 hours)  
Monday--4 units--
- ML 131 MARINE ALGOLOGY. A field-oriented study of ecological associations, physiology, identification, and systematics of marine and estuarine algae, with emphasis upon community relationships. - Prerequisite: college botany or equivalent. (lecture 1 hour, lab & field 6 hours)  
Thursday afternoon, Friday morning--  
3 units--Dr. Bell
- ML 161 MARINE ECOLOGY. A field-oriented exploration of the physical parameters of marine, estuarine, and freshwater environments, with emphasis upon ecological and physiological responses of plants and animals to limiting factors of those environments. Prerequisite: college biology. (lecture 2 hours, lab & field 3 hours)  
3 units
- ML 196g MARINE BIOGENIC SEDIMENTS. Interdisciplinary studies of provenance, geologic and biologic composition of marine sediments; and of organisms contributing to them; emphasis on microorganisms and hard remains. Prerequisites: college geology and biology. (lecture 2 hours, lab & field 3 hours)  
Friday--3 units--Dr. Arnal
- ML 196m MARINE METEOROLOGY. Introductory descriptive course in physical processes involved in wind-generated surface waves, currents, temperature structure, and near shore zones of the oceans. Prerequisite: upper division science major status. (lecture 2 hours, lab & field 3 hours)  
Monday--3 units--Dr. Read
- ML 181 LITERATURE OF THE MARINE SCIENCES. Studies of selected works from the pertinent literature as basis for colloquium and seminar presentations and discussions. Prerequisite: upper division science major status. (2 hours)  
Tuesday--1 unit--Staff
- ML 180 SPECIAL PROBLEMS IN THE MARINE SCIENCES. Faculty-directed study of selected research problems open to undergraduate students with adequate subject matter preparation. Prerequisite: consent of instructor. (3 hours per unit)  
One to three units--Staff
- ML 298 RESEARCH IN THE MARINE SCIENCES. (graduate) Independent investigations of an advanced character for the graduate student with adequate preparation. Prerequisite: consent of instructor. (3 hours per unit)  
One to three units--Staff

ALASKA'S NORTH PACIFIC  
ADDRESS BY  
GOVERNOR WALTER J. HICKEL