



noaa week

National Climatic Center

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Dr. Robert M. White, NOAA Administrator and U.S. Commissioner to the International Whaling Commission, Commerce Secretary Rogers C. B. Morton, and Mrs. Christine Stevens, representing conservation organizations dedicated to saving world's whales, look at conservation petitions prior to Dr. White's departure for IWC meeting.

Tornado Watchers Probe, Chase Oklahoma Storms

Project Aim Is New Seafood Delicacy

A large, succulent crustacean from Malaysia could join shrimp and lobster in popularity with America's seafood consumers, if the efforts of a team of Sea Grant scientists in South Carolina are successful.

With support from NOAA, specialists at several South Carolina institutions are working together to develop successful techniques for cultivating the giant Malaysian prawn—*Macrobrachium rosenbergii*—in captivity.

Dr. Paul Sandifer of the South Carolina Marine Resources Research Institute, located at Charleston, heads the project. Associated with him is Dr. Theo-

Severe thunderstorms—and the tornadoes they spawn—moving through central Oklahoma are being tracked, observed, chased, probed, and analyzed by scientists and sensors from the Environmental Research Laboratories' National Severe Storms Laboratory in Norman, Okla.

The project continues an annual series of data-gathering experiments begun in the early 1960's. Each year new elements are added to the science and technology used in the efforts to improve the present ability of meteorologists to detect the formation of destructive storms, comprehend the complex forces which set them in motion, and develop methods of predicting their occurrence.

The NSSL operates a dense network of surface and balloon-sounding stations, dual-Doppler and conventional weather radars, and other sensing equipment to

Fireball's Infrasound Is Recorded

A fireball that flashed almost unnoticed over Colorado in the early hours of April 22 left its mark on records from pressure sensors operated by scientists with the Environmental Research

Laboratories. It was the first time shock waves from an event positively identified as a fireball were recorded on two separate arrays of instruments, making it possible to locate the source of the sound waves.

The fireball, probably a meteor, passed over Boulder, Colo., at 2 a.m. local time, traveling from southeast to northwest. An astronomy-minded Boulderite, Michael Centala, who called NOAA to report it, described the object as greenish in color, and magnitude -5 or greater in brightness (about 20 times as bright as the brightest star in the sky).

The shock waves caused by the fireball's passage through the atmosphere were detected by two arrays of microbarographs—extremely sensitive pressure sensors deployed by scientists with ERL's Wave Propagation Laboratory. Mr. Centala's report of the fireball was invaluable, says Gary E. Greene of the laboratory's geoaoustics group. "If he hadn't seen the fireball, we would not have been certain what caused that type of signal on the record, since a sonic boom or a small,

Boston Harbor Chart Issued

New tidal currents charts, the first since 1931, have been issued for Boston Harbor by the National Ocean Survey.

The 13 charts, bound in one volume, provide data on the

Cloud-Seeding Mission Begins FACE 75

This week NOAA scientists conducted the year's first multiple cloud-seeding mission over the canaled farmlands south of Florida's Lake Okeechobee. The mission marked the beginning of FACE 75—this year's Florida Area Cumulus Experiment, the latest in a series of projects exploring the dynamics and precipitation processes of tropical cumulus clouds, and whether their rainmaking efficiency can be improved through cloud seeding.

FACE 75 is being conducted by scientists from the Environmental Research Laboratories' National Hurricane and Experimental Meteorology Laboratory in Coral Gables, Fla., in cooperation with ERL's Research Facilities

Center in Miami; the National Weather Services' National Hurricane Center in Miami; and the Universities of Miami and Virginia.

Dr. William L. Woodley, Acting Chief of the laboratory's Cumulus Group will direct the experiment, and Dr. Abraham Gagin, who directs the Cloud Physics Laboratory of Israel's Hebrew University of Jerusalem will participate as a consulting scientist, as will cloud physicists from ERL's Atmospheric Physics and Chemistry Laboratory in Boulder, Colo.

The project will run into September, or until an adequate data sample—about 25 experimental days, with seeding on about half of them—is obtained.

Indiana, Last Eligible State, Receives CZ Grant

Indiana became the 30th state to participate in the Coastal Zone Management Program this week when it received a first-year grant of \$220,000 from NOAA.

According to Robert W. Knecht, NOAA's Assistant Administrator for Coastal Zone Management, all the "eligible states and three U.S. territories are now participating in a national partnership with the Federal government with the goal of achieving wise and balanced use of land and water resources to benefit all citizens."

Also announced recently have been these second-year coastal management planning grants: Maryland and Michigan, \$400,000 each; Puerto Rico, \$350,000; Georgia, \$349,250; South Carolina, \$230,000; Pennsylvania, \$225,000; Minnesota, \$150,000; and Alabama, \$120,000.

Governor Otis R. Bowen has designated the Indiana State Planning Services Agency to administer the State's grant, a portion of which will be allocated

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calendar of events

- June 26-28
Davis, Calif. National Symposium on Precipitation Analysis for Hydrologic Modeling. Sponsored by Precipitation Committee of the AGU Section of Hydrology. (Dr. Eugene L. Peck, Chairman, AGU Committee on Precipitation, Hydrologic Research Laboratory (W23), NOAA, National Weather Service, Silver Spring, Md. 20910. 301-427-7619.)
- July 20-July 25
Cambridge, Mass. Ocean Resources Management: Legal and Policy Aspects. Special Summer Program. (Director of the Summer Session, Room E19-356, Massachusetts Institute of Technology, Cambridge, Mass. 02139. 617-253-2101.)
- September 3-4-5
San Francisco Symposium on Modeling Techniques for Waterways, Harbors, and Coastal Engineering (MODELING '75). Sponsored by American Society of Engineers, the Canadian Department of Public Works, the National Science Foundation, and the Office of Sea Grant. Will be preceded by one-day short course on modeling, directed by Professor Young Kim, Civil Engineering Dept., California State University, Los Angeles, Calif. (MODELING '75, Civil Engineering Dept., Clemson University, Clemson, S.C. 29631. 803-656-3000.)
- September 10-12
Seattle, Wash. The Third Biennial Workshop on Fisheries Research: Petroleum Hydrocarbons in the Marine Environment. Sponsored by NOAA, Marine Fisheries Service, Environmental Conservation Division (EC). Seattle. (Dr. William T. Roubal, Chairman, NMFS, NOAA, NWFC, EC Division, 2725 Montlake Blvd. E., Seattle, Wash., 98112. (206) 442-7737.)
- September 10-13
Las Vegas, Nev. 105th Annual Meeting of American Fisheries Society. AFS will meet during week with International Association of Game, Fish, and Conservation Commissioners. (Glen Griffith, Nevada Department of Fish and Game, Box 10678, Reno, Nev. 89510. 702-784-6214.)
- September 14-19
Las Vegas, Nev. The Third Joint Conference on Sensing of Environmental Pollutants originally scheduled for November 10-13 and the International Symposium on Environmental Monitoring originally scheduled for September 14-19 have been combined into the International Conference on Environmental Sensing and Assessment to take place in Las Vegas, Nevada. Co-sponsors include the World Health Organization (WHO), Institute of Electrical and Electronic Engineers (IEEE), American Chemical Society, American Institute of Aeronautics and Astronautics, American Meteorological Society, Environmental Protection Agency, Instrument Society of America, National Aeronautics and Space Administration, NOAA, and the Department of Transportation. Technical sessions will be structured by air, land, water, biology, and exposure monitoring; discussions will focus on critical interdisciplinary problem areas such as climate change, energy, health and sources and pathways of marine pollution. (Dr. C. E. Jensen, EM, NOAA, Room 825, WSC-5, Rockville, Md. 20852. 301-496-8646.)
- September 21-25
Washington, D.C. International Symposium on Computer Assisted Cartography sponsored by American Congress on Surveying and Mapping, in cooperation with U.S. Bureau of Census, (Dorothy Bomberger, Symposium Secretariat, U.S. Bureau of the Census, Washington, D.C. 20233. 301-763-7094.)
- September 25-27
Madison, Wisc. First Annual Meeting, Midwestern Region, American Geophysical Union. Deadline for receipt of abstracts: July 3. (Cynthia Beadling, AGU, 1909 K St., N.W., Washington, D.C. 20006. 202-331-0370.)

Correction for NOAA Organization Directory

Please make the following telephone number corrections in all copies of the NOAA Organization Directory Transmittal No. 24, dated April 16, 1975.

Page	Routing Code	Organization	Name	Telephone
5	AD1223	Supervisor, Page Office Service Leroy W. Marshall	140-47245
6	AD41	Chief, Personnel Operations Branch	... Roy C. Brown	14-68208
		Personnel Security Officer Ralph C. Reeder	14-68208
		Deputy Security Officer Orval Turner	14-68208

Tornado Watchers Chase Storms

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obtain an essentially full set of data on severe storms. Instrumented aircraft probe and examine the turbulent environment of thunderstorms.

An important innovation by the Norman facility, which is directed by Dr. Edwin Kessler, has been the development of what is probably the world's most proficient team of tornado chasers. The Intercept team pursues developing tornadoes, guided by radio messages from the laboratory in Norman. As the twister matures, the interceptors move to within a few miles of the storm, set up cameras furnished by the National Aeronautics and Space Administration, and try to capture on film some of the elusive quantities and qualities of the tornado—wind speed, destructive force, and life cycle.

This year a University of Wyoming van equipped to measure meteorological conditions has

Boston Harbor Chart

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speed and direction of the tidal current at hourly stages of the tidal cycle and are based on a detailed study of the dynamics of water circulation in the harbor made in 1971 by the NOS.

The investigation was undertaken at the request of officials of federal, regional and local government agencies in the Boston Harbor area interested in cleaning up the harbor and in improving offshore fisheries.

Also available are data compiled from this investigation which can assist engineers and environmentalists in tracking the movement and disposal of wastes discharged in the harbor area.

In addition to the tidal current charts, a companion publication of tidal current chart diagrams has also been issued.

Supplemental tidal current tables for Boston Harbor have also been prepared from the data and will be provided with each set of tidal current charts, or can be obtained separately from the NOS. The supplemental predictions will be incorporated in the 1976 Tidal Current Tables for the Atlantic Coast of North America, which will be published later this year.

joined the intercept team, gather weather (as well as photographic) data near developing tornadoes. Volunteers from the University of Oklahoma also participate in this part of the operation.

A new experimental device developed for the first time this year is an optical wind sensor array developed by ERL's Wave Propagation Laboratory in Boulder, Colo., which is measuring the flow of surface winds inward as the storm develops (convergence), and the outflow of surface winds (divergence) as the storm reaches maturity and begins to decay.

The thunderstorm penetration aircraft this year, as last, is an Air Force F-4C furnished with a chase plane by the 4950th Test Wing at Wright-Patterson Air Force Base, Ohio. A Queen Air from the National Center for Atmospheric Research in Boulder is being used to study the atmosphere near thunderstorms. Air traffic controllers from the Federal Aviation Administration guide the aircraft in penetration, thunderstorm-environment, and other research flights.

The U.S. Army at Fort Sill, U.S. Air Force Sixth Weather Squadron, Mobile, at Tinker Air Force Base, and the National Weather Service Forecast Office at Will Rogers Airport, Oklahoma City, are furnishing cooperative radiosonde information for the project.

This year, Kenneth E. Wilk is overall coordinator for the spring program; Dr. Richard J. Dwyer, who leads the Advanced Techniques project, is responsible for development and operation of the two Doppler radars and other advanced instrumentation; Dr. Ron Alberty's Meteorological Research Project is responsible for analysis and interpretation of the data collected; J. T. Dooley is in charge of surface station networks; Dr. Joseph H. Golden is in charge of the Tornado Intercept Group; and J. T. LeDirects the aeronautical portions of the program.

noaa week

Published weekly at Rockville, Md., by the Office of Public Affairs for the information of employees of the Commerce Department's National Oceanic and Atmospheric Administration.

Articles to be considered for publication should be submitted at least a week in advance to NOAA Week, Room 221, WSC-5, Office of Public Affairs, National Oceanic and Atmospheric Administration, Rockville, Md. 20852.

NOAA Week reserves the right to make corrections, changes or deletions in submitted copy in conformity with the policies of the paper or the Administration.

Catherine S. Cawley, Editor
Warren W. Buck, Jr., Art Director

Fishery Market News Reports To Be Sold

Fishery Market News Reports will be available by subscription beginning July 1, according to the National Marine Fisheries Service.

The reports publish pertinent information, gathered daily by NMFS through telephone and personal contact with key fishing ports and markets for fishery products, on current wholesale market prices, exvessel prices, landings, imports, and movements of fishery products both in the United States and abroad.

The reports, which also contain news items of interest to people in the fishing industry, are published in Boston; New York; New Orleans; Terminal Island, Calif.; and Seattle, on Monday, Wednesday, and Friday. In addition to the daily information, a weekly summary for each of the cities is published on Fridays.

The New York report specializes in wholesale prices for fresh and frozen fishery products traded in New York merchandising centers. The Boston report carries the Boston fish auction prices, the New Bedford auction prices, exvessel prices, landings in selected New England ports, Chicago market receipts, and frozen wholesale prices for the New England and Chicago areas. The New Orleans report carries Gulf shrimp landings and exvessel prices, and the Terminal Island report specializes in data pertaining to the tuna industry. The Seattle report contains information on the halibut, salmon, groundfish, king crab and shrimp fisheries in the northwestern United States, including Alaska, and also publishes data on British Columbia fisheries.

Annual subscription rates for three reports per week plus the weekly summary is \$35.00 per report (i.e., Boston, New York, New Orleans, Terminal Island, or Seattle). The weekly summaries are available for \$15.00 per year per report.

Checks or money orders payable to the Department of Commerce, NOAA, should be mailed to the U.S. Department of Commerce, NOAA, National Marine Fisheries Service, F2x1, Room 404, Page Building 2, Washington, D.C. 20235.

J. J. Bachtel Dies

J. J. Bachtel, former geodetic field party member, died on June 12 in Fayette, Ala. He had served on field parties of the Coast and Geodetic Survey (predecessor of the National Geodetic Survey) for forty years before his retirement in 1959. He is survived by his wife, of 408 East Columbus St., Fayette, Ala. 35555, two sons and three daughters.

A DEPARTMENT OF COMMERCE BRONZE MEDAL has been

presented to Edward L. McGuire, "in recognition of excellent technical ability and extremely competent performance as a research and operational meteorologist at the National Severe Storms Forecast Center, Kansas City, for more than 30 years."



Mr. McGuire, a Severe Storms Forecaster for four years prior to his recent retirement, began his NWS career in Kansas City in 1941, and was also cited last year for his individual performance during the tornado outbreak of April 3, 1974.

From left here are Allen D. Pearson, NSSFC Director; Mr. McGuire; Mrs. McGuire; and Charles G. Knudsen, NWS Central Region Director.

NCC Offers New Climatological Data Series

The Environmental Data Service's National Climatic Center in Asheville, N.C., has launched a long-term project to develop a microfiche file of selected climatological publication series which will offer substantial savings in both cost and shelf space to users interested in acquiring the publications or replacing current hard copy files.

All series will be filmed from the initial publication date through 1973. To date, Storm Data, Monthly Climatic Data for the World, Climatological Data, and Climatological Data, National Summary have been filmed, and Local Climatological Data publications are scheduled to be finished by the end of the year.

Series scheduled for later microfilming include: Hourly Precipitation Data, Hydrologic Bulletins, Weekly Weather and Crop Bulletin, Northern Hemisphere Data Tabulations, Climates of the States, Daily River Stages, Summary of Hourly Observations, Mariner's Weather Log, Monthly Normals of Temperature, Heating Degree Days and Cooling Degree Days, Climatic Summary of the United States, and World Weather Records.

When the program is finished, about 1 1/4 million pages of climatological data will be available on microfiche, at a reduction

Blue Pencil Awards Won

Two NOAA publications were among the winners of the Federal Editors Association Blue Pencil Awards for Outstanding Government Publications Produced in 1974.

NOAA Magazine was awarded first prize in the category for One-Color Magazines and Periodicals.

"National Weather Service Launches SKYWARN '74," by Edwin P. Weigel, NWS Public Affairs Officer, won second prize in the News Release Category.

factor or space savings of about 70 to one. In addition, obtaining microfiche copies of out-of-print issues of publications is considerably less expensive than obtaining reproduced paper copies. A diazo copy microfiche costs 60 cents, a silver positive copy, 80 cents. Each microfiche contains about 58 pages of climatological data; the cost for paper copies of 58 pages from out-of-print issues is about \$15.

Costs can be reduced even further by placing a standing order for microfiche copies of publications series not yet filmed, since copies can be made at the same time the original microfiche is produced with considerable savings in personnel time and effort. The cost of such a diazo copy microfiche is 30 cents, a silver positive copy, 50 cents.

All prices listed above are subject to change. To order any microfiche series or for further information, including payment procedures, write to National Climatic Center, Federal Building, Asheville, N.C. 28801. NCC's telephone numbers are 704-258-2850, Ext. 620 (commercial) and 704-254-0620 (FTS).

Scientists Map Lightning Hazard For Apollo-Soyuz

The American half of Apollo-Soyuz, the joint U.S.-U.S.S.R. manned space flight planned for July, will be launched from Kennedy Space Center during Florida's incomparable lightning season.

This month, a team of Federal and university scientists is trying to learn to predict when it will be safe to launch the U.S. Apollo-Saturn vehicle through the crackling atmosphere over Kennedy Space Center.

The project is being conducted by NOAA scientists, working with the Naval Research Laboratory, National Aeronautics and Space Administration, New Mexico Institute of Mining and Technology, and the University of Arizona. Dr. Heinz Kasemir of the Environmental Research Laboratories' Atmospheric Physics and Chemistry Laboratory is directing the NASA-funded project.

The scientists will be using three instrumented aircraft and an elaborate ground network installed two years ago to construct a three-dimensional map of the atmosphere's electrical fields around the Space Center, and to determine the conditions when a rocket penetrating these fields will trigger a lightning strike.

They hope by July to be able to predict what the electrical conditions will be at and over the launching pad, 10 to 20 minutes in advance. This will permit space flight managers to evaluate the lightning hazard before proceeding with the launch.

The current project continues one begun for NASA by the NOAA researchers soon after the Apollo 12 lightning strike. Other NOAA participants include F. James Holitzka, William E. Cobb, Dr. W. David Rust, Billy R. Caldwell, Frederic N. Gould, and Elemer Magaziner. NASA's project coordinator at Kennedy Space Center is A. Taiani.

R. Adm. Allen L. Powell, Director of the National Ocean Survey, (right) recently presented the copperplate engraving of a chart issued

in 1859 for Hempstead Bay, Long Island, N.Y., to Dr. Walter W. Ristow, Chief of the Geography and Map Division of the Library of Congress. The nautical chart was the first to be issued for that area by the Coast and Geodetic Survey (predecessor of the NOS).



notes about people

Don Hoss and Bill Hettler, of the National Marine Fisheries Service Atlantic Estuarine Fisheries Center in Beaufort, N.C., recently spent a week at Frying Pan Shoals Light Tower, about 30 miles off the coast from Cape Fear, N.C., measuring the effects of heat shock on fish eggs and copepods (small shrimp-like animals that are the food of many

marine fishes). Their study is part of the NMFS program concerned with the effects of nuclear power stations on marine life.

The men were flown by a CH-46 helicopter, piloted by Lt. Ron Meng and Capt. Rudy Kaiser, Squadron HMM-162 of Marine Air Group 26 at New River Air Station, from Beaufort

Airport to a landing deck on top of the tower, which is manned by the U.S. Coast Guard as a navigational aid.

The biologists returned to Wrightsville Beach on the Coast Guard Cutter Point Martin.

Arthur F. Talamantes, Jr., a Weather Service Specialist at San Antonio, Tex., has been named Official in Charge of the National Weather Service Office at San Angelo, Tex.

He began his 20-year weather career in the Navy and, with the NWS since 1957, served at Wichita Falls, Midland, Fort Worth, and Houston, Tex.; Swan Island, Honduras; and Balboa, Canal Zone, before going to San Antonio.



Mr. Talamantes



SPECIAL ACHIEVEMENT AWARDS have been awarded to ten crewmen of the NOAA Ship Oceanographer in recognition of their outstanding service during the ship's participation in the JOINT I and GATE research projects. From left here are Rear Admiral Herbert R. Lippold, Jr., Director of the Pacific Marine Center; Oskar Nygard; Gerald G. Sellers; Lawrence J. Murray; Dennis H. Finney; Capt. William D. Barbee, Commanding Officer; Stephen C. Amtower; and James M. Grotelueschen.

Award recipients not shown are Jon P. Amtower; James F. Kilian; Warrington Richards, and Earl D. Cain.

Fireball's Infrasonic Is Recorded

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nearby explosion could have produced a similar signal."

The microbarographs are used to study infrasonic (very low-frequency pressure waves of frequency far below that audible to the human ear) caused by severe storms, ocean waves, air flow over mountains, and other events. A permanent network of seven instruments is located in and northeast of Boulder, and another array of three had been set up in Fraser, about 22 miles to the west. The Fraser Array was installed by another Wave Propagation Laboratory scientist, Alfred J. Bedard, for a winter study of infrasonic generated by air flow over mountains.

Almost simultaneously at 2:04 a.m., on April 22, both arrays of microbarographs detected and recorded an acoustic source from the northwest, which agrees with the direction reported by Mr. Centala. By triangulating the signals from two different locations, the ERL scientists were able to pinpoint the source of the signals at latitude 42.1 degrees north, longitude 106.1 degrees west, a spot near Laramie, Wyo.

They surmise that when the meteor passed over Boulder, it was too high to be detected by the microbarographs, but when it reached the vicinity of Laramie, it had probably descended low enough so its interaction with the denser atmosphere was

strong enough to produce detectable acoustic waves.

Records of infrasonic from meteors are extremely rare. The first known case was in 1908, from a huge fireball in Siberia. Since then, airwave effects from fireballs have been recorded only perhaps half a dozen times—three times by the late Vernon H. Goerke, of ERL's Wave Propagation Laboratory.

Mr. Greene says that to his knowledge, the April event was the first time infrasonic was used to triangulate on a fireball's position, and that the Laramie meteor must have been larger than most.

So far, Mr. Centala is the only person the NOAA scientists have found who saw the April 22 meteor. "If anyone else saw it," says Mr. Greene, "we hope they'll contact us."

best fish buys

According to the NMFS National Fishery Education Center in Chicago, the best fish buys for the next week or so are likely to be cod and gray sea trout along the Northeast Seaboard; croaker and gray sea trout in the Middle Atlantic States, including the D.C. area; flounder and mullet in the Southeast and along the Gulf Coast; canned tuna and whole white bass in the Midwest; shrimp meat and canned tuna in the Northwest; and canned tuna and fresh blackcod in the Southwest.

Save time, Save energy, Save money—join the Composite Check Program. For details call 301-496-8507.

Indiana CZ Grant

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by the agency to other State offices.

Indiana will use the grant to develop a comprehensive program for allocating the shoreline among competing users in a sound and rational manner. Indiana's shoreline contains one of the heaviest industrial and population centers found anywhere in the country, and a mounting number of difficult problems, such as:

—There is a growing need for more energy facilities along the coast, but no place to locate them. About one-half of Indiana's shoreline, the State also notes, is already committed to commercial-industrial uses, and the other half to residential use. The industrial-commercial uses vie for the same land and water resources that recreational, housing, and other uses require, and private development is resulting in conflict with demands for public access to the shore.

—Erosion is another major problem confronting the State's shoreline, as are flooding and sedimentation problems. According to a recent study, the average erosion rate for the entire Great Lakes region is two tons per acre per year, but in Indiana, the rate is close to eight tons per acre.

R. I. Tax Changes

Employees who are subject to state tax withholdings for the State of Rhode Island may notice a minor change in their state tax for salary checks dated on or after July 2, 1975.

Thrifty Mail Habits

Outgoing publications that weigh less than one pound are mailable as third-class mail at low postage rates. The endorsement "Third Class" must be clearly indicated above the address on such mail in order for the Postal Service to charge the low third-class postage. Without this endorsement the much higher first-class rate is applied, and NOAA's postage bill is increased considerably.

Project Aim Is New Seafood Delicacy

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dore Smith, mariculture specialist.

"In appearance, size, and flavor," Dr. Sandifer explains, "the Malaysian prawn lie somewhere on a scale between the shrimp and spiny lobster. Most important of all to the prospective grower, the prawn is known to reproduce and prosper in captivity."

Last spring and summer, they stocked five outdoor freshwater ponds with about 25,000 laboratory-reared postlarval prawns. When the ponds were harvested three to five months later, 60 to 70 percent of the prawns had survived and grown substantially.

At Clemson University, engineers Drs. Paul Zielinski and Walter Castro have experimented with two types of tanks for rearing the prawn larvae. Their studies not only are advancing the design of tanks, but are also providing new information on circulating patterns within the tanks and on the use of small air-lift pumps. In the course of their work, they found that existing information on air-lift pumps

does not apply to the small pumps that lift water less than 15 feet to provide circulation in culture tanks. Their efforts to fill this information gap will have wide application outside the field of aquaculture.

Dr. John Manzi of the College of Charleston is investigating the value of algae-rich "green" water as a supplemental food source for prawn larvae, and Jeanne Joseph of the Marine Resources Institute is studying the fat content of cultured prawns and the influence of diet on this content.

Pilot-scale commercial aquaculture of the species in the United States began in Hawaii and is now underway at several other locations in the United States. Related Sea Grant-supported projects are being conducted by the University of Georgia, Hawaii's Department of Land and Natural Resources, University of Hawaii, Florida Atlantic University, and the Micronesian Mariculture Development Center at Palau in the Pacific Trust Territories.



National Oceanic and Atmospheric Administration

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