U.S. DEPARTMENT OF COMMERCE / National Oceanic and Atmospheric Administration

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Contract Let For Alaskan Water Studies

The University of Washington in Seattle has been awarded contracts by NOAA totaling more than $1.5 million to study currents, the interaction of oil with sea ice, and planktonic life in the Gulf of Alaska and the Bering and Beaufort Seas.

The studies are part of a major marine environmental investigation conducted by the Environmental Research Laboratories for the Interior Department's Bureau of Land Management. Researchers are seeking to determine the probable ecological impacts of oil exploration and development activities on Alaska's outer continental shelf.

Primary objectives of the university research are to determine Arctic water circulation patterns and how they would transport petroleum pollutants, seasonal distributions and environmental requirements for plankton, and possible interactions between ice and oil.

The University of Washington scientists plan to install three

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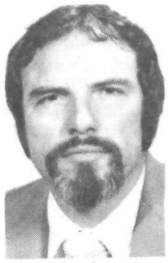
Dr. R. J. Engelmann Appointed Director Of OCSEAP Program

Dr. Rudolf J. Engelmann has been appointed Director of the Environmental Research Laboratories' Outer Continental Shelf Environmental Assessment Program (OCSEAP). The multi-million-dollar study, which seeks to determine the probable ecological impacts of oil exploration and development activities on Alaska's Outer Continental Shelf, is being conducted by ERL for the Interior Department's Bureau of Land Management.



Dr. Engelmann

During the early years of the program, investigators will examine intensively the life forms and physical environment of the Outer Continental Shelf of Alaska, focusing on eight oil leasing areas spread among the Gulf of Alaska, Bering Sea, Chukchi and Seas.

They will evaluate the roles

(Continued on page 3)

Humboldt U. Awarded Grant To Continue Anchovy, Hake, Herring, Salmon Research

Humboldt State University will continue its marine advisory services and research into such commercially valuable fish as anchovy, hake, herring, and salmon, under a $125,000 Sea Grant announced recently.

The State of California and other non-Federal sources will add $82,000 in matching funds to the grant.

The University's Marine Advisory Service transfers information from its research community to commercial fishermen, businessmen, government officials, and other southern California consumers.

Advisory agents plan a series of workshops for fishermen, to include demonstrations of new trawling methods, survival techniques, and vessel safety and electronics. Also, they will undertake a cooperative effort with the fishing industry to try to develop a commercial herring fishery.

Fisheries biologists are study-

(Continued on page 2)

New Porpoise Protection Measures Are Announced

Procedures designed to lead to a substantial reduction in incidental porpoise deaths during U.S. yellowfin tuna purse seine fishing in the eastern tropical Pacific in 1976 have been announced by Robert W. Schoning, Director of the National Marine Fisheries Service.

"Under no circumstances will a level of mortality be permitted that jeopardizes maintenance of porpoise stocks," he said.

The fleet's performance will be monitored by NMFS observers aboard a scientifically determined sample of U.S. vessels during the fishing season.

These observers will provide the information about the extent of porpoise mortality and its causes. Their data will be used, in addition, by NMFS and tuna industry scientists and gear experts as a basis for improving gear and fishing procedures to reduce propoise mortality further.

To achieve a mortality level significantly below that of 1975, a quota for 1976 will be established next May if the total number of porpoise deaths for the year is projected to exceed 70 percent of the total 1975 toll. The present estimate of the 1975 kill, although uncertain, is expected to approximate 130,000 animals. A final estimate will be available early in 1976.

Action to impose a quota will be taken primarily on the basis of observer data on numbers of

(Continued on page 4)

Cdr. Tibbit Directs LSC

Cdr. Donald R. Tibbit is now Director of the National Ocean Survey's Lake Survey Center in Detroit, Mich.

Cdr. Tibbit

He was formerly the NOS Deputy Associate Director of Marine Surveys and Maps in Rockville, Md. He has been a NOAA commissioned officer since 1959, and his assignments have included service aboard five NOAA ships, with geodetic survey parties, and as Director of the National Tsunami Warning Center in Honolulu, Hawaii.

In 1964, Cdr. Tibbit received a Department of Commerce Silver Medal for his outstanding leadership and service to the Nation in the Development and coordination of the Southern Coastal Plains Expedition (SCOPE), during which a concentrated survey was made of the continental shelf region off the Carolinas, Georgia, and Florida.

He attended Texarkana Junior College and is a graduate of the University of Oklahoma.

MEMBERS OF THE 52ND NOAA CORPS' OFFICER TRAINING CLASS were (front row, from left) Michael J. Kretsch, Stuart E. Garb, Kathy J. Doering, Bryce M. Scott, J. Fain McGough, Kent A. Doggett, George D. Carroll, Patricia A. Pipho, (middle row, from left) Roger L. Parsons, Dean L. Smehil, James W. Peterson, Nicholas L. Konchuba, Kenneth G. Vadnais, James W. Lyon, (back row, from left) Patrick M. Woods, Warren T. Dewhurst, E. Scott Varney, Neal G. Millett, Gary M. Barone, and Stanton M. Ramsey.

NOS Produces Second International, Second Metric Nautical Chart

The second of five international charts to be produced by the National Ocean Survey is now available.

The chart, INT 514, covers the northern portion of the Bering Sea, including Bering Strait, and is issued as part of a multination program sponsored by the International Hydrographic Organization. It is 1:3,500,000 scale, and is the second metric nautical chart produced by the office.

The IHO program is designed to provide a standard, worldwide series of charts which can be used by all nations. Each member nation is authorized to reprint charts in its own language, but must employ the same form of navigational information, including depth curves, sounding spacing, aids to navigation, and nautical symbols.

Nations which have agreed to produce and issue international charts are Canada, West Germany, United Kingdom, France, Brazil, Argentina, Chile, Italy, Netherlands, Japan, India, New Zealand, Australia, and possibly South Africa.

The new chart was compiled in accordance with IHO specifications and shows elevations and depths in metric units. Loran-C lines of position for electronic navigation are shown in addition to the usual nautical chart information.

International Chart INT 514 (National Ocean Survey Chart 514) is priced at $3.25, and may be obtained from the NOS Distribution Division, (C44), Riverdale, Md. 20840.

"Greenhouse Effect" Works for Atmosphere, Not for Greenhouses

The "greenhouse effect," often used to explain the way the atmosphere and solar energy collectors trap incoming radiation from the sun, apparently doesn't work for greenhouses, according to a scientist with the Environmental Research Laboratories.

The announcement may deprive scientists, teachers, and science writers of a well-worn tool for explaining some aspects of climatic change and how solar energy collectors work.

What keeps the earth warm? The atmosphere is transparent to solar radiation in the familiar spectrum of visible light. But, when the earth transforms these rays into the longer-wavelength infrared rays of heat energy, atmospheric carbon dioxide holds them in, keeping the planet comfortable by letting visible radiation into the lower atmosphere, but inhibiting the exit of infrared rays.

Like a greenhouse, we think; remembering elementary science and how glass walls are transparent to incoming, visible wavelengths but opaque to outgoing, infrared ones.

But that isn't how a greenhouse works, writes Dr. Ronald L. Schwiesow, a physicist with ERL's Wave Propagation Laboratory.

In a letter to the magazine *Optical Spectra*, he notes that the so-called greenhouse effect (or "radiative trapping") plays at best only a poor secondary role in keeping the air inside greenhouses warm. Instead, he says, citing experimental work done near the turn of the century by R. W. Wood, the transparent enclosure reduces convection—vertical motion caused by heating—and the cooling effect it produces in the free atmosphere.

Solar collectors, he explains, work the same way. By suppressing convective cooling within the collector, heat produced by incoming solar radiation is held in. "While clever optical design can reduce radiative losses, convective loss reduction is the primary . . . design consideration for a solar collector," Dr. Schwiesow says.

A DEPARTMENT OF COMMERCE BRONZE MEDAL has bee

presented to LaVerne M. Wermich, Supervisor of the Chicago forecaster aide staff "in appreciation and recognition of long and meritorious service, high standards of excellence and effective leadership." Ms. Wermich received her award from the National Weather Service Central Region Director, Charles G. Knudsen.

Humboldt University Awarded Sea Grant

(Continued from page 1)

ing the Pacific herring and the northern anchovy in the Humboldt Bay to learn the distribution and abundance of these important species. Last winter the biologists determined the major herring spawning areas and spawning times in the Bay, where previously no data on herring had been collected.

Other scientists will gather information on the biology, processing, and marketing of hake, an underutilized resource in the U.S. which is harvested primarily by foreign fleets. They will co operate with the fishing industr in Eureka to determine if an eco nomically sound market can b developed in the U.S. for hake a a food fish.

Biologists are working on a new project this year to discover the reason for recent low return of adult chinook salmon and steelhead trout to the Trinity River Hatchery in northern Cali fornia. Preliminary evidence sug gests that changes in river water temperature may interfere with the fishes' natural instinct to swim downstream. If this pro to be correct, California Fish Game biologists will search for better methods for releasing juvenile trout and salmon.

In studies dealing with marine environmental problems, a team will test the impact of chemical pollutants from paper mill effluents by using a sensitive, on-the-spot, bioassay technique. Newly-fertile eggs from a marine worm will be exposed to the paper mill plume and then immediately analyzed to assess the possible effects of the effluent. A second project will seek to identify, disease-causing bacteria and viruses in Humboldt Bay to learn if tra ditional testing methods are sufficient to determine accurately when a threat to public health exists.

calendar of events

December 4 Boston, Mass.	"The Sun, Sea, and Survival," a lecture by Clarence Zener, Carnegie-Mellon University, in a series on Energy and the Environment, supported by the Lowell Institute, and sponsored by the New England Aquarium and the MIT Sea Grant Program. At 7:00 p.m. at the New England Aquarium Auditorium. Free and open to the public.
December 4-6 La Jolla, Calif.	International Conference on the Nature of the Oceanic Crust. (Cynthia Beadling, AGU, 1909 K St., N.W., Washington, D.C. 20006. 202-331-0370.)
December 5 Washington, D.C.	"Mapping the Grand Canyon," an illustrated lecture by Dr. Bradford Washburn, Director, Boston Museum of Science, at the Potomac Region of American Society of Photogrammetry meeting. National Geographic Society Auditorium, 1146 16th St., N.W., at 7:30 p.m. Open meeting for all interested persons. (Art Holzweissig, President, Potomac Region, ASP. 301-763-1262.)
December 8-12 San Francisco, Calif.	1975 Fall Annual Meeting of American Geophysical Union. (Cynthia Beadling, AGU, 1909 K St., N.W., Washington, D.C. 20006. 202-331-0370.)
December 11 Boston, Mass.	"The Windpower Alternative Energy System," a lecture by William E. Heronemus, University of Massachusetts, in the series on Energy and the Environment described above.
December 11-12 Savannah, Ga.	Conference on Marine Resources of the Coastal Plains States, sponsored by the Coastal Plains Marine Center, in cooperation with Virginia, North Carolina, South Carolina, Georgia, and Florida. (Philip G. Hill, Conference Coordinator, Coastal Plains Center for Marine Development Services, 1518 Harbour Drive, Wilmington, N.C. 28401. 919-791-6432.)

noaa week

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

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

A NOAA UNIT CITATION was presented recently to the Nautical Section of the Negative Engraving Branch in the Reproduction Division of the National Ocean Survey's Office of Aeronautical Charting and Cartography, "in recognition of outstanding individual and collective contributions toward furthering NOAA's Mission." Their successful integration of the Lake Survey Charting Program with the NOS Charting Program during the past year and the on-schedule completion of this greatly enlarged Nautical Chart Program was a major achievement.

The group honored included Thomas H. Allen, Phillip A. Armstrong, Douglas L. Christian, Leonard F. Cox, Robert E. de la Chevrotiere, Charles Doerr, Donald C. Dominick, Sandra F. Folker, Earle E. Frazier (Section Chief), Bertha M. Garner, Robert P. Geiman, Francis R. Hanahoe, James J. Hart, James Jackson, Jr., Michael J. Jessop, Paul Koromos, Donald R. Kramer, Mary E. Manser, Louis N. Milazzo, Linda J. Morris, John R. Morrison, Bessie L. Page, Joseph J. Palermino, James R. Peabody, Morris Rosenberg, Charles A. Selby, Malcolm T. Short, Eugene A. Sorsdal, Karen F. Speas, James C. Sunday, Roscoe B. Ward, Jr., and Lily F. Wright.

The award was presented by NOS Director R. Adm. Allen L. Powell, who was accompanied by Walter J. Chappas, Deputy Associate Director, AC&C.

Meteorologists From 33 Countries Attend Satellite Data Interpretation Seminar

Ralph K. Anderson, Assistant Chief of the Applications Group in the National Environmental Satellite Service, recently returned from Nairobi, Kenya, where he directed a two-week regional training seminar on the interpretation, analysis, and use of meteorological satellite data.

Mr. Anderson

Sixty-three meteorologists from 33 African countries attended the seminar, which was supported by the United Nations and the World Meteorological Organization.

A co-director of the seminar was P. Krishna Rao, who was formerly with NESS and is now with the WMO World Weather Watch.

In previous years, similar seminars have been conducted by NESS employees in Japan, Australia, Russia, and Mexico. Meteorologists from all of these and other countries routinely receive pictures from NOAA's polar-orbiting satellites through the Automatic Picture Transmission system aboard the spacecrafts.

Dr. Engelmann Heads OCSEAP

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that natural processes play in spreading contaminants from petroleum development sites, how marine life would be affected, and what natural hazards face oil development activities in this region.

Before joining NOAA, Dr. Engelmann was Deputy Manager for the environmental research of the U.S. Energy Research and Development Administration and its predecessor, the Atomic Energy Commission. Previously, he led the agency's Fallout Studies Branch, concerned with planning and managing basic research programs in support of the Nation's need for better knowledge of radioactive fallout processes.

Earlier, while with Batelle Northwest in Richland, Wash., he designed and conducted research projects and experiments in meteorology, and in the 1950's, he was an Air Force weather observer and forecaster.

Dr. Engelmann received a B.A. degree in mathematics from Augsburg College at Minneapolis, Minn., attended New York University, and received his Ph.D. in atmospheric physics from the University of Washington at Seattle.

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 ocean perch and pollock along the Northeast Seaboard; sea trout and fluke in the Middle Atlantic States, including the D.C. area; fresh kingfish and speckled trout in the Southeast and along the Gulf Coast; fresh whitefish and dressed whiting in the Midwest; snow crab sections and sliced blackcod in the Northwest; and fresh fillets of butterfish and snow crab sections in the Southwest.

1974 Oceanic Gamefish Data Is Published

Detailed information on the catch results of 33 big-game fishing tournaments held in 1974 highlight the third annual edition of the Oceanic Game Fish Investigations Newsletter, produced under the auspices of NOAA.

Scientists from the National Marine Fisheries Service Southeast Fisheries Center at Miami, Fla., compiled and analyzed the extensive data appearing in the newsletter. They also served as scientific observers at many of the fishing tournaments. Additional data were obtained in cooperative sampling arrangements with the Florida Department of Natural Resources, the South Carolina Wildlife and Marine Resources Department, and the Georgia Department of Natural Resources.

The publication results from a cooperative program between oceanic game fishermen and NMFS scientists. In general, it presents synopses of bill-fish catches (blue marlin, white marlin, and sailfish) in the northwest Atlantic, the Gulf of Mexico, and the Caribbean Sea. Fishing effort is compared to catches, the most productive time of day for billfish catches is noted, and historical data about weights and distribution patterns for the fish are presented.

In 1974, game fish tournaments north of Cape Hatteras, N.C., were sampled for the first time. A 50 percent increase in the number of white marlin hooked over 1973 reflects this additonal coverage of the great white marlin fishing grounds off the mid-Atlantic coast.

Data in the newsletter are supplemented by listings of billfish catches in the western Atlantic Ocean from 1957 to 1972, obtained from the Japanese longline fishing fleet.

Results of the first full year of joint research on the tuna and billfish stocks in the Atlantic Ocean under the NMFS-Woods Hole Oceanographic Institution Cooperative Game Fish Tagging Program are included.

Copies of the 1974 Oceanic Game Fish Newsletter may be obtained from the Southeast Fisheries Center, National Marine Fisheries Service, NOAA, 75 Virginia Beach Drive, Miami, Fla. 33149.

C.C. Gunnerson Is Honored By ASCE

Charles C. Gunnerson, Director of the Environmental Research Laboratories' Marine Ecosystems Analysis program office in Boulder, Colo., has received the 1975 Wesley W. Horner Award of the American Society of Civil Engineers for his paper, "Environmental Design for Istanbul Sewage Disposal."

Mr. Gunnerson

The award, instituted in 1968, is made annually to the author of a paper making the most valuable contribution to the environmental engineering profession.

The author of more than 50 technical papers and reports dealing with environmental research, design, and management, Mr. Gunnerson also has been awarded the Rudolph Hering Medal in 1960 and 1967 by the ASCE for outstanding environmental engineering research papers. He has been elected a Fellow of the Society and is currently chairman of its Committee on Research.

Prior to joining ERL last year, Mr. Gunnerson was Director of the Great Lakes Regional Office of the International Joint Commission. Earlier he was chief sanitary engineer for the World Health Organization project in Turkey described in the paper for which he received the 1975 ASCE award.

He studied mining engineering at Iowa State University and civil engineering at Oregon State University, received an A.B. degree in geology from the University of California at Los Angeles and has done graduate work in oceanography and marine bacteriology at the University of Southern California.

notes about people

Philip E. Shideler has been appointed Meteorologist-in-Charge of the National Weather Service Forecast Office at Topeka, Kans. He succeeds Ed Provost, who retired after 34 years of service.

Mr. Shideler

Mr. Shideler entered the NWS in 1956 at Topeka and has been the Principal Assistant there since 1969.

He is a graduate of Kansas State University and also has attended the University of New Mexico and Washburn College.

Edward C. Snead, Jr., has been named Chief of the Facilities Branch in the Technical Services Division of the National Ocean Survey's National Oceanographic Instrumentation Center in Washington, D.C. He will head the effort in the acquisition of new, and maintenance of existing, unique oceanographic test and calibration facilities at NOIC headquarters and regional centers.

Mr. Snead

He served previously in NOIC's Reliability and Metrology Divisions and with the NOS study group that performed a special study for the NOS Director on support requirements of NOS and NMFS electronic equipment used aboard NOAA ships. Earlier he was with the U.S. Naval Oceanographic Office's Engineering Support Group.

He received his degree in mechanical engineering from Howard University.

Harvey A. Teyler is the new Official-in-Charge at the National Weather Service Office at Alamosa, Colo., replacing John C. Stokes, who has retired.

Mr. Teyler

Mr. Teyler has been serving for the past nine years at the WSO in Rochester, Minn., and previously was assigned at Grand Island, Nebr., Bismarck, N. Da[illegible] and Glasgow, Mont.

Robert L. Stalnaker, Jr., is the new Meteorologist in Charge at the National Weather Service Meteorological Observatory in Stephenville, Tex. Since joining the NWS as a Chartist at Suitland, Md., in 1960 after four years in the Air Force, he has served at Brownsville, Tex.; Jacksonville, Fla.; Nashville, Tenn.; and most recently was a Weather Service Specialist at Daytona Beach, Fla.

Mr. Stalnaker

He has studied at Jacksonville University, the University of Tennessee, Cumberland College (Tenn.) and has taken correspondence courses from Oregon State and Pennsylvania State Universities.

Contract Let for Alaskan Water Studies *(Continued from page 1)*

sets of current meters in the Beaufort Sea, where ice is a dominant feature and little is known about water circulation. The instruments will take measurements every 20 minutes for an eight-month period, recording current speed and direction, and water temperature. Each set of current meters will be placed about 328 feet (100 meters) beneath the sea surface to avoid drifting ice.

Studies of interactions between oil and sea ice—for example, absorption and spreading of petroleum contaminants by ice—will concentrate on the thick ice of many years' accumulation in the Beaufort Sea. Much of this work is already underway as part of the Arctic Ice Dynamics Joint Experiment (AIDJEX), a U.S.-Canadian research program. The present contracts extend AIDJEX to include studies of the behavior of near-shore ice where ice undergoes seasonal variations. The university researchers will use instrumented NOAA buoys to gather environmental data in these areas.

University scientists also will be studying plankton, the drifting organisms which make up the largest percentage of all marine life and form the primary basis of the sea's food chains. During spring, a special algae or phytoplankton community blooms on the underside of sea ice, accounting for an estimated 25 percent of "on site" food production in Arctic waters. Spilled oil spreading along the underside of sea ice could severely restrict this productivity, and this would affect zooplankton, the primary consumers of algae and other phytoplankton and the major food source for fish and shellfish.

Results of a plankton sampling program in the Gulf of Alaska and the Bering and Beaufort Seas will be used by the university to develop a computerized model identifying the major factors involved in plankton production and the functioning of marine ecosystems.

New Porpoise Protection Measures *(Continued from page 1)*

porpoises killed per set. The regulations which will be promulgated are aimed specifically at reducing the number of porpoises killed in each setting of the purse seine. In addition, total mortality, which is related to the total tuna catch and other characteristics of the fishing season, will be considered. This procedure for setting a quota and estimates of porpoise mortality reductions that can be achieved assume that the 1976 fishing season will be similar to that of 1975. Any material differences in the two seasons will be given due consideration in the final establishment of the quota.

The NMFS Director will announce his decision regarding possible imposition of a 1976 quota during a public hearing to be held in Washington, D.C., in May.

"If a quota is required," Mr. Schoning said, "it will be announced in sufficient time to ensure that propoise stocks will not be adversely affected and to allow fleet operations to be adjusted. I believe the procedure we now propose will meet the intent of Congress to keep the industry viable.

"I am looking toward a substantial reduction in porpoise deaths next year, approximately 30 percent below 1975 levels," he said. "We will need and are counting on the fullest cooperation from the tuna industry in achieving this objective. We intend to place observers on fishing vessels for about 10 percent of all trips, monitoring vessel performance, and reporting on porpoise mortality and compliance with regulations."

The procedures modify NMFS proposals announced in the *Federal Register* last September that a ceiling be set on the numbers of porpoises that could be killed and that an observer be placed on every boat in the fleet. The modifications were made as a result of an analysis of the record of public hearings on the earlier proposals, exploration of the problem with industry and representatives of conservation interests, and review by the NOAA Administrator and the Secretary of Commerce.

The action now proposed conforms in large measure to the recommendations of the Marine Mammal Commission, established by the Marine Mammal Protection Act of 1972 to advise government agencies on the protection of marine mammals.

NOAA Scientists Take Pyrheliometers To Fourth International Comparison

Four NOAA scientists participated in the Fourth International Pyrheliometric Comparison last month at the World Meteorological Organization World Radiation Center in Davos, Switzerland, where comparisons of national and WMO regional standard pyrheliometers are held every five years. Pyrheliometers are precise sun-tracking instruments which measure the strength of direct solar radiation, providing measurements fundamental to studies of large-scale atmospheric processes, which are driven by energy from the sun, and to the design of solar energy conversion systems.

The goals of the comparison this year, attended by representatives of 27 countries, were to insure all pyrheliometers are at the same reference level and to establish the difference between the current reference scale and [illegible] new proposed absolute scale. T[illegible] proposed scale is represented by several instruments of new design.

Edwin C. Flowers, Chief of the Solar Radiation Calibration Facility of the Environmental Research Laboratories' Air Resources Laboratories in Boulder, Colo.; Douglas V. Hoyt, Physicist in ERL's Geophysical Monitoring for Climatic Change program in ARL; Michael R. Riches, Solar Radiation Specialist in the National Weather Service Data Systems Division; and William Morrison, Physicist in the NWS Engineering Division, took with them five of NOAA's pyrheliometers for comparison. Two were the new type instruments and three were of conventional design. The instruments are used for standardization of the equipment in the NWS solar radiation network and in ERL's GMCC program.

J. A. Anderson Dies

James W. Anderson, former Principal Assistant at the National Weather Service Forecast Office in Philadelphia, died on November 2. When he retired in 1968, he had served the Government over 38 years, most of them in Philadelphia.

He is survived by his wife, Irene, and two children, Doug[illegible] and Eleanor. The family may b[illegible] addressed at 1032 Belfield Ave., Drexel Hill, Pa. 19026.

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