one of the shipping agents in the Republic is expected, informing ships' handlers in general of the facts and above all the owners of ships involved in international fishing.

"Extending beforehand the appreciation of the director for the attention and interest paid to that set forth here, I take this opportunity to reiterate the assurances of my distinguished consideration. Signed: Pana Angel Kourluklis, Director, Consular and Maritime Administration."

Source: U.S. Embassy, Panama.

## Canada Fills Fishery Information Positions

R. Nix Wadden, 43, of Ottawa, has been appointed Chief of Information for Environment Canada's Fisheries and Marine Service. The appointment, following a Public Service Commission competition, was announced by K. C. Lucas, Senior Assistant Deputy Minister, Fisheries and Marine. Charles Friend, 43, of Aylmer, Que., has been appointed to serve as Chief of Fisheries and Marine Information during the next 12 months while Mr. Wadden undertakes French language training to fulfill the language requirements of the position.

Born in St. John's, Newfoundland, Mr. Wadden is a graduate (B.A.) of St. Francis Xavier University, Antigonish, N.S. He was a news reporter and editor with radio and television stations in Newfoundland before joining the Information staff of the former Department of Fisheries at Ottawa in 1966. He has been Acting Chief of Information with the Fisheries and Marine Service since September 1973.

A native of New Zealand, Mr. Friend has had extensive experience in news writing and reporting, and has been, since February 1973, Chief of Editorial Services with the Office of Tourism, Department of Industry, Trade and Commerce. His journalistic career covered reporting and editing assignments with the Daily Commercial News, Canadian Press, CBC National TV News, Star Weekly and CBC International Service. He was for 3 years with Expo 67, serving as head of the Production Section of the Public Relations Department. In 1972 he joined the Department of Industry, Trade and Commerce as Assistant Manager, News Service.

## KUWAIT, JAPAN FORM JOINT SHRIMP VENTURE

The Japanese trading firm Nissho Iwai is scheduled to form a joint shrimp fishing and processing venture in Kuwait around June 1974 with a local firm identified as United Fishery of Kuwait. The joint company, to be named "Kuwait Overseas Maritime Fishery Company," will be established with an authorized capital of US$3 million and will be owned 70 percent by the Kuwait firm and 30 percent by the Japanese. Japan has been purchasing around 2,000 tons of frozen shrimp annually from Kuwait, but this is the first time the Japanese are entering into a joint shrimp venture in that country.

Source: Suisan Keizai Shimbun.

*Fishery Notes*

## Narragansett Bay Flounder Decline

Two University of Rhode Island scientists have reported that a slight natural temperature change in Narrangansett Bay may be causing a decline of winter flounder there as well as offshore.

Basing their estimates on an eight-year survey of winter flounder in Narragansett Bay, Dr. H. Perry Jeffries, professor of oceanography, and a graduate student, William G. Johnston, said that a water temperature increase of less than one degree over that period may be causing the winter flounder decline. The scientists reported their findings in the latest issue of Maritimes, a quarterly magazine published by the Graduate School of Oceanography at URI.

After a slow increase in abundance from a low in 1966, there was a continuing decrease by about 78 percent from 1968 to 1972, Dr. Jeffries said, and by 1973 the flounder levels had fallen below those of 1966. "We looked for a reason for this," he said, "and found that a comparison of temperatures with fish counts showed a surprising relationship. As temperature increased flounder abundance declined."

The decline of flounder in the bay was a forerunner, by about 30 months, of declining catches offshore, the researchers said. Normally, flounder spawn in Narragansett Bay in winter and the tiny larvae swim above the bottom until March. But the temperature change may be causing the larvae forms to change to flounder earlier each year, and as a result they may be encountering different predators, Dr. Jeffries said. "Because laboratory studies have such limited significance for long-range trends in nature, we should make a detailed survey of bottom organisms and what they are eating to test this hypothetical change in predator-prey relationship," he stated.

A continuing warming trend would not necessarily cause a further decline in bay flounder, Dr. Jeffries said. "It is possible," he added, "that complex interrelationships might influence such factors as prey, predator, food and timing so that the population would eventually adapt and increase in warmer waters."

Dr. Jeffries said the results seem also to show that the effects of power plants on the bay's environment cannot be predicted from laboratory experiments on a single species. "Short-term laboratory experiments have limited significance for long-term changes in nature," he said. "We need to develop better methods for studying the long-range processes of the estuary."

## California Moves To Restore Abalones

Two thousand juvenile abalones were successfully seeded in a kelp bed off California's Palos Verdes Peninsula on 12 June 1974 as the first phase of a project to re-establish this once prolific resident in that area by the California Department of Fish and Game. The project also will help biologists determine the feasibility of

re-establishing abalone populations in other areas of the coast where their numbers have decreased in recent years.

The spot chosen by the Department of Fish and Game for the seeding was Abalone Cove, which received the name because of the great numbers of red abalones that once could be found there. Abalones and the kelp that helped support them disappeared from the cove in the early 1960s, probable victims of a succession of warm water years and pollution.

Since that time more effective controls have lessened the pollution hazard, and Fish and Game marine biologists have succeeded in establishing a kelp bed in the cove with transplants from Santa Catalina Island. Fragments of drifting kelp are an essential part of the abalone's diet as it matures. At their present stage of growth, however, the principal food of the juvenile abalones will be diatoms, minute, one-celled algae which are plentiful in the cove.

The juvenile abalones were flown from San Luis Obispo to Long Beach, then transported by boat to Abalone Cove. All survived the trip without incident. Biologists selected a small reef in the cove as site for the seeding. This natural habitat will be augmented by the addition of concrete blocks, which will also help to provide hiding places from predators, such as starfish. Before placing the abalones in their new home, Fish and Game divers cleared the site of sea urchins which compete with abalone for food.

Two age groups of abalone were put on the reef. The older abalones, about 1½ years, measure from 1 to 2 inches in diameter. The younger abalones, about nine months old, measure on the average a little less than ½ inch in diameter. The older age group was purchased by the National Marine Fisheries Service and turned over to the DFG for planting under a cooperative program. The smaller abalones were purchased by the department.

Twenty percent of the older abalones have been tagged with stainless steel tags. The younger abalones, too small to be tagged, have been "color coded" by feeding them special foods which create color patterns in their shells that biologists can identify. The project at Abalone Cove offers no immediate bonanza to the sports diver. It will be 7 or 8 years before the red abalones reach a legal size of 7 inches at greatest diameter.

## TEXAS TO GET NEW COASTAL FISHING PIER

Texas fishermen are due another top-quality saltwater fishing spot. The Texas Parks and Wildlife Commission recently approved a plan to convert Queen Isabella Causeway in Cameron County into a fishing pier. The causeway is to be acquired from the Texas Highway Department.

The Highway Department offered the causeway to the commission because of a new causeway being built just north of the old one. The Cameron County pier will be the third such fishing pier acquired in this way. One is in Port Lavaca and another is near Rockport on Copano Bay.

Pending favorable results of a public hearing to be held June 6, concerning the project, the pier would include fish-attracting lights, restrooms, a concession building, parking facilities and docking facilities.

The concession facilities will offer bait and tackle and vending machines.

*Publications*

# Recent NMFS Scientific Publications

Data Report 82. Cook, Steven K., James F. Hebard, Merton C. Ingham, Ellsworth C. Smith, and Carlos Afonso Dias. **"Oceanic conditions during the Joint Investigation of the Southeastern Tropical Atlantic (JISETA)—February, April, and September-December 1968."** 358 p. (6 microfiche). For sale by U.S. Department of Commerce, National Technical Information Service, 5285 Port Royal Rd., Springfield, VA 22131.

Abstract—Oceanic conditions in the upper 1,000 meters in the water column off tropical western Africa are portrayed. The portrayal is comprised of vertical sections of temperature, salinity, sigma-*t*, oxygen, and phosphate. A description of methods of sampling, analysis, data processing, and quality control is presented.

Data Report 83. Lyon, James M., and Kenneth N. Baxter. **"Sample catches of penaeid shrimp taken by trawling in the northwestern Gulf of Mexico, 1961-65."** 50 p. (1 microfiche). For sale by U.S. Department of Commerce, National Technical Information Service, 5285 Port Royal Rd., Springfield, VA 22131.

Abstract—Data from a 5-year shrimp trawling survey of the northwestern Gulf of Mexico are reported by station, time, and depth. Numbers of 12 species of penaeid shrimp taken during 113 cruises are recorded.

NOAA Technical Report NMFS SSRF-676. Penn, Erwin S. **"Price spreads and cost analyses for finfish and shellfish products at different marketing levels."** March 1974. 74 p.

Abstract—The rapid increase of fish prices has recently caused public concern. To find the cause of the difference between the price the fisherman receives for his product and the ultimate price paid by the consumer, the report analyzes the distribution of the consumer's dollar paid to the retailer as well as to the wholesaler, processor, and fisherman.

Selected for this study are seven finfish, two canned fish, and four shellfish products. The difference or margin between selling and purchasing prices of each level and the share of the consumer's dollar by each level and each cost component are calculated for each fish product. The report also analyzes the costs and profits incurred by each marketing function and describes the major influence on margin differences.

The objective of the study is to give individual firms in the fishery a systematic guide to examine their margins, costs, and profits for each fish product; compare them with