

Fishery Resources Surveyed with Deep-Sea Camera

by Bruce C. Mundy

■ A recently acquired deep-sea camera was used to survey fishery resources at Penguin Bank, off Moloka'i, said Richard S. Shomura, director of the Honolulu Laboratory, Southwest Fisheries Center, National Marine Fisheries Service (NMFS). The camera was set on the ocean floor in 404 feet of water during a cruise of the NOAA ship *TOWNSEND CROMWELL* completed on April 18. Surveys were conducted near areas where three artificial reefs had been placed by the NMFS. Bait placed in front of the camera attracted animals from the surrounding water to the place where they were photographed. The camera, prepared by NMFS fishery biologist John T. Harrison, took a picture every minute for 2 hours. Although 'aweoweo were the only food fish attracted to the camera, other fish, such as puffer and eel, and crab were attracted to the bait. Small shrimp were seen in almost every photograph. The shrimp, which are too tiny to be used as food directly by man, may be an important energy source for commercially valuable fish. The deep-sea camera, allowing views of areas difficult to see with divers or to sample with nets, will be a useful tool for future research by the NMFS. The camera can be set at depths as great as 20,000 feet.

Under the supervision of chief scientist Bruce C. Mundy, the *TOWNSEND CROMWELL* cruise also included trap surveys at the Penguin Bank area and studies of the distribution of larval fish near O'ahu. Fish, shrimp and lobster traps were set in the vicinity of the artificial reefs to determine what types of animals were in the area. While previous observations of the reefs from the University of Hawaii's submersible *MAKALI'I* have revealed concentrations of fish at the reef, little is known about the numbers of animals on the surrounding bank. The recently completed trap survey found no commercial-sized shrimp and few lobster, crab or fish. Most of the fish were ta'ape, an abundant species initially introduced to Hawai'i in 1955.

The third of four planned studies of the distribution of larval fish at O'ahu was also completed during the cruise; studies have been done during the autumn, winter and spring. The goal of this work is to better understand how the larvae, the very youngest stages of fish, might be affected by Ocean Thermal Energy Conversion (OTEC) power plants planned for the islands. . . . Bruce