standards Fefferman is a prodigy. He received his doctorate in mathematics at age 20 and two years later became the youngest full professor at any U.S. college, when he was appointed to the position at the University of Chicago. His colleagues have described his rapid rise to prominence in his field "spectacular," but he is equally recognized by his students as an accomplished teacher with an ability to clarify the complex recesses of mathematics. □

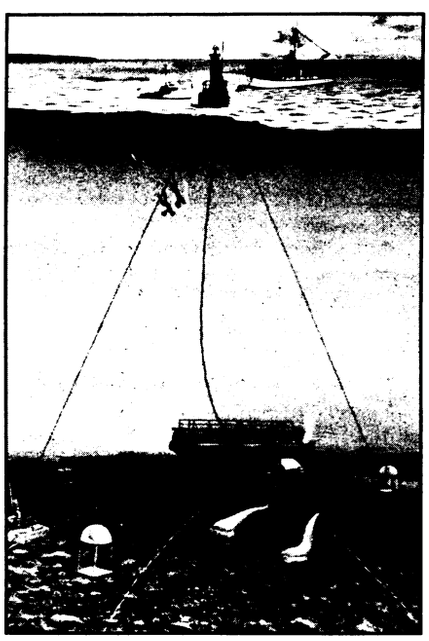
U.S. and France share ocean plans

Illustrations: NOAA

German "Helgoland" habitat will be home for U.S. and French divers this summer.

A variety of topics ranging from the effects of thermal effluents of nuclear power plants to living and working on the seafloor are included in a U.S.-French cooperative agreement on ocean studies, announced this month by officials from both countries. The agreement is an expansion of a research relationship that has its roots as far back as 1969, now grown to encompass aquaculture, pollution studies, minerology, instrumentation development and coastal-zone research.

A highlight of the newly expanded program will be a month-long experiment this summer in the Baltic Sea near Travermunde, West Germany, using a four-person German undersea habitat called Helgoland. Operated by a German crew, Helgoland will be home for four teams of U.S., French and German divers living for a week each at a depth of about 16 meters. Physical and chemical ocean-bottom studies will be concerned with sedimentation, nutrients, oxygenation and exploration of shallow, sub-bottom layers. Considerably enlarged from a related program in 1974, also in the Baltic, the experiment will also involve studies of diver safety telemetry, physiological evaluations of human tolerance to cold, high-pressure environments and evaluation of an experimental U.S. Navy decompression computer.



Helgoland at work with surface support.

Under the agreement, U.S. and French oceanographic and geophysical researchers also plan to exchange information and conduct joint investigations into the formation of manganese nodules, increasingly prominent as a valuable seafloor resource. Officials of the U.S. National Oceanic and Atmospheric Administration emphasize, however, that the work will be strictly a scientific study—not a resource-mapping survey, which is a hot potato in France as well as in the U.S., as mineral-mining companies impatiently await the establishment of some kind of open-sea legislation to regulate resources far from national boundaries.

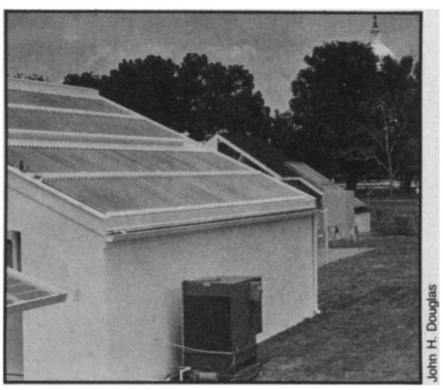
French researchers will also become involved in CEPEX, the U.S. Controlled Ecosystem Pollution EXperiment, in which 10-by-30-meter "balloons" are used beneath the ocean surface to provide controlled habitats for a variety of biological and other studies. A similar study has been underway in France.

Ocean pollution has been a part of U.S.-French sea studies almost since their inception. They have grown until they now include three major areas: prevention and control of oil spills, remote sensing in the marine environment, and pollution prevention equipment for ships as required by international agreements. U.S. researchers have already found success in modifications of French oil-spill cleanup techniques, and the two nations have combined their research buoys in joint monitoring tasks. Under the new agreement, researchers will try out each other's oil-spill containment barriers and oil-skimming systems, including testing in the United States of the French Cyclonet oil-recovery device and the Caiman system for storing recovered oil.

A number of aquaculture experiments are planned, including the exchange of data and techniques in the commercial rearing of oysters, coho salmon (using eggs supplied to France by the U.S.) and shrimp. U.S. researchers are interested, for example, in France's successful rearing of a species of tropical shrimp that has so far defied American efforts at forced maturation.

Besides NOAA and the Navy, U.S. agencies involved in the agreement include the Coast Guard, National Science Foundation and Energy Research and Development Administration. □

Energy exhibit



John H. Douglas

Within site of the U.S. Capitol, a new Solar House (closest) and a Conservation House have been built as part of a unique energy exhibition on the Mall for Bicentennial tourists. The exhibit is a cooperative project of the Energy Research and Development Administration, the Federal Energy Administration, the Department of Housing and Urban Development and Concern, Inc. Robert Hirsch, ERDA's assistant administrator for solar, geothermal and advanced energy systems, says one aim of the exhibit is to increase public awareness that the success of solar and conservation programs depends on what individuals do in their own homes. □