# Bisplinghoff to Resign

Raymond L. Bisplinghoff, the deputy director of the National Science Foundation since 1970, will leave Washington in October to become president of the University of Missouri's science and engineering campus at Rolla. Close associates say his resignation stems from a long standing desire to try his hand at a university presidency and reflects no unhappiness with NSF.

An aeronautical engineer who headed advanced research for the space agency in the early 1960s, Bisplinghoff spent 2 years as dean of engineering at MIT before moving to the science foundation. There he played a major role in organizing the NSF's new program of Research Applied to National Needs, in overhauling the NSF's educational programs, and setting up its new science policy units. In doing so, he became an important force in a fundamental and sometimes controversial shift within the agency toward applied research.—R.G.

in the Pacific illustrates how much remains to be accomplished.

As recently as the late 1950's, tuna were still being taken largely by the "live bait" technique—a hook and line method first developed by the Japanese centuries ago. In the 1960's, however, the purse seine came into extensive use and revolutionized tuna fishing (although many live-bait boats continue to operate today).

The modern purse seiner may be a vessel of 1000-ton capacity that costs more than $3 million—and, more than likely, it is American, for the tuna industry is one part of the world fishing industry that Americans dominate. The vessel's huge net will be, say, 3600 feet long and 600 feet deep, and will weigh many tons. The use of so large and heavy a net was made possible only by the introduction of the "power block." Suspended from a boom at the aft end of the ship, this roller-like device is used in retrieving the net.

In a successful set of a large purse seine an entire school of tuna may be caught. Late last year, the *Royal Pacific*, operating out of San Diego, claimed a new industry record when in a single setting of its purse seine it took 10,000 yellowfins of 40 to 70 pounds each, this catch totaling some 350 tons. Catches of 150 tons in a single set are common, and, for the crews of the superseiners, not altogether welcome. The emptying of the net may take 6 hours or more, so long that many of the tuna may die and spoil before they can be placed in the refrigerated hold.

The stock of Atlantic bluefins is in such trouble that the U.S. National Marine Fisheries Service recently announced an emergency research and management program in an effort to save it. Aided by aircraft that spot the fish feeding at the surface, American purse seiners have taken the highly vulnerable school tuna with ruthless efficiency. At the same time, Japanese boats have been catching many of the giant bluefins—the spawning population on which perpetuation of the species depends—by using advanced long-line fishing methods that even include the retrieval from central computers of detailed information about the conditions under which previous catches were made.

For several years now there has been an International Commission for the Conservation of Atlantic Tunas, but this body is yet to recommend to its member governments any specific measures for the protection of the bluefin. In the Pacific, the Inter-American Tropical Tuna Commission, responsible for a conservation zone running from northern Mexico to Chile and extending westward perhaps a third of the way to the Hawaiian Islands, has established a quota for yellowfins. Yet, even here, there is a real question how effective its regulations ultimately will prove.

This year, for instance, an "over catch" already has occurred because the member nations failed to agree on the quota in time to notify the fishing fleet before the tuna season began. Moreover, the quota consists essentially of a limit on the total catch, with only a very small part of it specifically reserved for a few nations such as Mexico and Costa Rica.

This free-for-all, grab-what-you-can system favors the U.S. tuna fleet because it represents more than three-fourths of the total capability of all vessels engaged in the fishery. The American fleet, much too large in relation to the allowed yellowfin catch, is sure to resist any further reservation of fish to foreign fleets unless the overall quota is increased, as it repeatedly has been in the past.

In its current negotiating position at Caracas as to what kind of regime is in order for the control and management of fisheries, the United States seeks to reconcile the highly divergent interests at play, domestic and foreign. The U.S. position has been based on the "species approach," by which fishery regimes would be based on the biological and economic facts that pertain to particular fish stocks; this is in contrast to a zonal approach whereby coastal nations would each exercise control over all stocks within a wide zone offshore.

### A New U.S. Position

On 11 July, however, Ambassador John R. Stevenson, head of the U.S. delegation at the Law of the Sea conference, announced that the United States would accept the concept of national "economic zones" extending offshore up to 200 miles. This represented a concession to the developing nations as well as to a major part of the U.S. fishing industry, but it by no means represented a total abandonment of the species approach. That approach is retained in the exceptions and provisos accompanying the U.S. position. These are as follows:

- Highly migratory stocks such as tuna would not be subject to management by coastal nations, but, rather, would be managed by international bodies (as they are now, after a fashion).
- Anadromous stocks such as salmon would be managed by the coastal nations in whose rivers and streams the fish reproduce. The jurisdiction of the "host" nations over these stocks would not be limited by any geographic zone but would extend to the full migratory range of the fish. Also, the host nations alone would harvest the fish, because it is these nations that can best determine the condition of the stocks and have to bear the cost of maintaining suitable habitat for the annual spawning runs.
- The principle of "full utilization" would be observed. Coastal nations would enjoy a preferential right to harvest stocks (nonmigratory stocks