The Off-Shore Banks of the Atlantic

The North Atlantic is the greatest fish basket in the world.

Its off-shore banks are great shallows a few hundred feet below the surface, warmed by the sun and rich in vegetation. Small animals—zooplankton—eat the plants and are eaten in turn by large schools of fish. There are twenty-eight basic species.

There are many banks but two are supreme—the Grand Banks, southeast of Newfoundland, and Georges Bank, due east of Massachusetts and southwest of Nova Scotia.

Each year fishermen take millions of tons of cod and herring (the most important), haddock and hake, and hundreds of thousands of tons of scallops and lobsters from the banks.

The cod family is in a class by itself since it includes most of the major commercial fish—atlantic cod, haddock, pollock, common hake and cusk. They resemble each other but can be distinguished by their size and the line of their dorsal fins.

Atlantic cod, the biggest, can be six feet long and weigh 200 pounds. In earlier years it was dried or salted, but now much of the catch is marketed fresh or frozen. Cod liver, once prized for its nutritious oil, has lost its market to synthetic vitamins.

Scallops are also of special importance since they bring high prices, and the sharing of the scallop beds of Georges Bank is a serious point of contention between Canada and the United States. They are mollusks with ridged, wavy-edged shells, measuring two to six inches from front to back. They do not attach themselves to the ocean bottom but move about by opening their shells wide to let water in, then snapping them shut and forcing the water out. The muscle which opens and closes the shell is the edible part.

Crisis of Fishes

Until the 1950s Americans and Canadians took 90 per cent of the fish harvested, but foreign factory ships, huge and equipped with complex electronic equipment for tracking fish, arrived in growing numbers, stayed for months, cleaning, filleting and freezing the fish as soon as they were caught. By the early 1970s the local fishing fleets were getting less than half the catch.

In 1976 Canada and the United States extended their off-shore economic zones to 200 miles, including the banks, and barred the foreign fleets except under special license. They also set species-by-species limits.

The species have made an impressive comeback.

Since the 200-mile extensions of the two countries overlapped in the Gulf of Maine and on Georges Bank, they began negotiating the sharing and management of these traditional fishing grounds. They agreed that the boundary line would be decided by an international tribunal. A separate treaty setting quotas, fixing management responsibilities and providing for periodic adjustments, was signed on March 29, 1979, after eighteen months of complex negotiation.

It was negotiated by committed and knowledgeable people, but when it was presented to the U.S. Senate for ratification it came under attack by New England fishing interests, mainly because of its provisions on scallops. It was withdrawn when it became clear that it would not be ratified. The boundary question is still before the International Court of Arbitration at The Hague.

Whales

Dr. Peter Beamish is trying to talk to the whales in Trinity Bay.

The Bay, off Cape Bonavista in Newfoundland, is one of the world's best places to find the great whales—the blue, the fin, the right whale, the humpback and the minke—the largest ones with baleen (or whalebone) instead of teeth. The fringed plates hang from the roofs of their mouths, and they use them to filter plankton and small fish from the sea.

It has been well established that whales talk and sing to each other. Whale songs last about twenty minutes, are highly repetitive and continue for days, with forty to fifty different phrases. The songs change each year, and each year all the whales in the North Atlantic sing the same new song. (Recent research indicates that the songs, when issued with great intensity, stun the sea animals the whale feeds on into insensibility.)

Dr. Beamish, a biologist and acoustician, left his job with the Bedford Institute of Oceanography in 1979 to try some experiments in communication. He hopes to develop a computer-based exchange language combining elements of English and the sounds whales make.

Ben Baxter, his research associate, told *Canadian Geographic* how they intend to make the breakthrough.

"Peter wants to get close to the whales in a boat that has both a receiver and transmitter on it, and send them back to a computer with both a receiver and transmitting signal [at his headquarters in Trinity, 160 miles northwest of St. John's]. When the whale makes a sound . . . the computer imitates and transmits the same sound. The whale may receive and repeat it but he soon gets bored. We want to move on . . . to more than merely parroting the whale's sounds. That's where the computer comes in—it helps us innovate in the other animal's language."