

earth and environment

OCEANOGRAPHY

Newly found current may move tuna

An area in the western Pacific, until recently believed to consist of still waters like the Atlantic's Sargasso Sea, has been discovered to contain a 100-mile-wide current that may be important to tuna fishermen.

The current runs inside the curve formed when the North Equatorial Current runs into the Philippines and turns northward as Japan's Kuroshio Current. It was discovered in the course of a two-year, eight-nation survey of the Kuroshio, sponsored by UNESCO's Intergovernmental Oceanographic Commission.

Measurements by 17 ships show the current to be about 300 meters deep, running eastward at from 1.3 to 2 knots. Japanese researchers believe it may move young tuna, larvae and eggs into the central and eastern Pacific, which would indicate that tuna caught in different Pacific fishing grounds may be related. If true, this would mean that tuna catches made in the western Pacific could affect the size of those in the east.

AGRONOMY

Saline irrigation for Queensland

Vast areas of Queensland, Australia, could be turned into lush pasture by irrigating them with aerated seawater, according to Dr. S. A. El-Swaify of the University of Hawaii's Department of Agronomy and Soil Science.

Saline water could be used for irrigation in tropical areas, Dr. El-Swaify says, by mixing it with fresh or aerated water. Much of Queensland is believed to contain soil types suitable for such irrigation.

Present pasture grasses, pineapples, coconut palms and date palms are among the plants which could grow in saline water, the agronomist says. In addition, he told an International Soil Science Congress in Australia, hybrid species particularly resistant to damage from salinity should be developed.

He warned, however, that saline irrigation could be harmful unless carefully controlled.

"The problem of soil salinity is very great," he said. "For example, in Pakistan, some 7 million acres of land have been put totally out of production due to mismanagement."

WATER POLLUTION

Floating scoop de-oils harbors

Still mindful of the disastrous wreck of the tanker Torrey Canyon 17 months ago, Britain is trying to stem oil pollution any way it can. The latest development is a self-propelled, pontoon-shaped vessel designed to scoop up oil leaked during transfer from ship to shore.

Produced by the Government's National Research Development Corp., the vessel is 20 feet long and eight feet wide, with its oil collection apparatus mounted in the bow. This consists of a number of endless belts running over two horizontal rollers, the forward one of which is partially immersed in the water. Floating oil adheres to the belts and is carried up to the top roller, where it is stripped into a tank.

If the oil layer is continuous and thicker than one-

eighth of an inch, the device can collect up to five tons of oil per hour, plus about 10 percent residual water. Oils ranging in viscosity from kerosene to heavy fuel oil have been picked up by the device, which operates satisfactorily in waves up to six inches high—a difficulty in the open sea, but acceptable in harbors.

AGRICULTURE

Attack launched on weed

One of the world's most destructive weeds, nutsedge, is the target of a newly launched five-year study by crop scientists at the University of Agricultural Sciences in Hebbal, India.

Nutsedge is worthless for forage, perennial, widespread, fast-growing and hard to kill. Under a grant from the U.S. Department of Agriculture, the researchers will investigate the use of growth regulators and other substances such as ATP, a participant in plant metabolism, to make the plant's cells more vulnerable to chemicals in small enough amounts not to damage crops.

The grant will be paid under Public Law 480, using funds from sales of farm products to India. The money may not be spent in the U.S., but may be spent for foreign scientific research that will benefit this country.

HYDROLOGY

Pre-flood prediction data studied

Prompted by recent flash floods in England, Britain's Natural Environment Research Council has launched a three-year survey of the data used to predict rain runoff.

All existing records from river and reservoir gauging stations will be analyzed to determine the frequency of peak water levels, peak discharges and peak volumes. Though gauging stations are few and far between, and their records go back only 10 or 20 years, the data will be correlated with plentiful rainfall records for the same time period, to determine the amount of flooding for each rainfall. Extrapolation will be used to estimate the magnitude of earlier floods.

Once a historic pattern has been obtained, taking into account changes in kinds and amounts of land use, meaningful predictions of future floods will be possible. This will enable civil engineers to design flood protection schemes more accurately, as well as to estimate the savings in damage from a given investment.

METEOROLOGY

The coldest U.S. property yet

A record low temperature for any United States installation, minus 123.1 degrees F. was registered July 20 at Plateau, Antarctica, where an eight-man Navy and Antarctic Research Program team is spending the nine-month winter.

The former U.S. record, minus 121.4 degrees, was set at the same station on Aug. 24, 1966. The world low of minus 126.9 degrees was measured at Russia's Vostok station, 850 miles away, in 1960.

The isolated station is one of several manned under a National Science Foundation research program.