natural sciences

ECOLOGY

Fewer sharks, more octopuses

A population explosion of octopuses in the waters off the east coast of Australia reportedly threatens the Tasmanian crayfish industry.

The sudden increase is due to increased netting of sharks, the octpuses' natural enemy, according to John Hammond, former president of the Flinders Island branch of the Tasmanian Professional Fishermen's Association.

Flinders Island fishermen have caught more than 2,000 octopuses, some with tentacles spreading as much as 18 feet, in the past four months. The octopuses had been raiding crayfish pots.

"I did a survey recently and found that the Flinders Island fleet had lost about $27,000 worth of crayfish so far this year because of the onslaught of the octopuses," says Hammond. "It is a very serious situation, one that could cripple the crayfish industry."

AIR POLLUTION

Pigeons warn of danger to man

Pigeons, hardly regarded as man's favorite bird, could offer valuable warning about air pollution dangers, says Dr. Martin F. Tansy of Temple University in Philadelphia.

"Human tests using urine, saliva or blood show only acute levels of pollutants, not the effect of long-time exposure," he says. Pigeons, however, can be sacrificed, autopsied and their vital organs studied to measure pollutant levels absorbed by body tissues.

To be sure that pigeons could serve as valid pollution indicators for man, Dr. Tansy compared tissues from groups of farm and city pigeons for lead contamination. With only one exception, all the downtown birds had much higher tissue lead levels.

PESTICIDES

Root-zone microorganisms

The ways in which root-zone microorganisms affect, or are affected by, the action of plant pesticides will be studied by researchers at the College of Agriculture in Wroclaw, Poland.

The five-year study is aimed at letting soil scientists selectively modify crop root environments. For example, mixed populations of nonparasitic and phytopathogenic organisms can alter the resistance and susceptibility of plants to diseases and to various soil treatments.

SILVICULTURE

Dutch elm disease again

Dutch elm disease, which destroyed nearly 20 percent of all British elm trees in a decade-long affliction ending in 1937, has reappeared in southern England and the Midlands. Forestry Commission experts regard the present attack as the worst outbreak since that time.

In one of the last appearances of the disease in 1954, 200 magnificent elms in Kensington had to be destroyed. The elm is found as a hedgerow tree in every county south of a line from Chester to Hull and including Wales. The worst-hit counties this year are Worcestershire and Herefordshire.

The disease is caused by a beetle that lays eggs under the bark. In mild cases the tree can be saved by removing the affected branch, but heavily infested trees have to be felled. Yellowing foliage is the most readily recognizable symptom.

A new outbreak of another tree disease, fire-blight, has also been found in hawthorn trees surrounding England's Kentish and East Anglian orchards. Since the disease arrived in Britain in 1957, more than 50,000 fruit trees, mostly apple and pear, have had to be destroyed. Since this summer, 45 outbreaks occurred, affecting 2,000 apple trees in Essex and Suffolk.

OIL POLLUTION

Floating wall combats oil spills

A new weapon against oil spills at sea, called the Red Snake, has been developed by a Gothenburg, Sweden, sea captain, Erling Blomberg.

The device, which recently saved the south Swedish coast from oil pollution after a tanker accident there, consists of two 60-centimeter-high walls or booms that float on the water's surface, two-thirds submerged. Made of polyvinylchloride foil with pockets containing ballast and flotation material, the Red Snake comes in 50-meter sections that can be combined to any desired length.

The wall is inexpensive enough to be disposable, says Trelleborgs Gummifabriks AB, which now manufactures it, but can be reused several times. In one version, it can be towed between two tugs, while a third ship sucks up the accumulated oil.

FOREST MANAGEMENT

Kenya to develop forest resources

A forestry project, financed by a grant from the World Bank, is planned to make Kenya self-sufficient in basic wood products, as well as to produce surpluses for export.

The highlands of Kenya, with their volcanic soils and favorable climate, are excellent for growing softwood, the bank reports. Growing a tree to desirable size for sawwood takes only 30 to 35 years in Kenya compared with 60 to 80 years in most of the world's major softwood growing areas. Trees for pulpwood attain desirable size in 15 years, compared with 30 to 45 years elsewhere.

The new project will see the planting of 48,000 acres of cypress and pine for sawwood and 23,000 acres of pine for pulpwood. Kenya has already planted some 200,000 acres of cypress and pine and 20,000 of eucalyptus under its existing reforestation plan.

In about 30 years, when the first timber is expected to be felled on the sawwood plantations, about half the output will be absorbed domestically and the rest exported. A pulp and paper mill is planned at Broderick Falls near the plantations, with the overall project employing about 1,500 resident workers.