

natural sciences

POLLUTION

Training germs to clean up

Bacteria are usually highly particular about the kind of diet they choose. There are now available ways of changing their tastes, however, so that they can become adapted to new ways which are advantageous to man.

The Wildlife Management Institute reports on successful attempts to adapt bacteria for the treatment of certain heretofore nondegradable chemical waste portions of industrial sewage. Starting with a strain of bacteria grown on powdered milk culture, small quantities of sewage sludge were introduced over a period of time in ever-increasing amounts. Since bacteria are capable of rapid evolutionary adaptation, due to the rapidity with which they reproduce, the experimental challenge weeded out those bacterial organisms that could not make the transition and within a relatively short time, scientist had a strain of bacteria that was suitable for treatment of industrial waste.

The work was done by Robert Pruessner of Petro-Tex Chemical Corporation.

MARINE POLLUTION

Pipes pose problems

Pipes which extend many miles into the sea represent a growing international trend in municipal and industrial waste discharge, and a new form of marine pollution, harmful to fish and other ocean life.

Dr. Sidney I. Holt of the Food and Agriculture Organization of the United Nations says that new forms of contamination are "increasing almost faster than our ability to get information on them." Variety of contamination sources, some new, and some well recognized but suddenly increased in magnitude, such as the super giant oil transports now prowling the oceans, have combined in serious proportions, he says.

The list of international pollution problem areas now includes the Baltic Sea, the Iberian trench, 200 miles off Spain and Portugal and ocean waters off Nigeria, as well as the oceans surrounding the large industrial countries. Representatives of many African countries express fear that industrialization will make Africa a new "theater of marine pollutions."

Dr. Holt recently spoke before a 34-nation FAO committee in which he called for international regulations to control marine pollution.

ORNITHOLOGY

Painted eagles bear watching

Birdwatchers or anybody else between Missouri and Canada at this time of year should be on the lookout for large soaring birds with bright red-orange tails, not in hopes of discovering a new species, but in the spirit of cooperation with a scientific project.

Ornithologist Frank J. Lugas has been catching bald eagles in southern Missouri, painting a band of harmless bright red-orange paint along the end of the tail, adding some blotches on the body and wings, and sending the birds on their natural way northward to their nesting areas. The marking is part of a study to learn more about America's national bird which is perilously

near to extinction; it is expected to furnish data on migration pathways and nesting habits, and other information which may provide answers to the eagle's decline.

Reports are expected from chance observers from Missouri, Indiana, Illinois, Michigan, Minnesota, North and South Dakota and Canada. Reports of place and time of sightings should be made to the research department, National Audubon Society, Box 231, Tavernier, Fla.

CONTINENTAL DRIFT

Lake Surprise yields one

The really important blocks of evidence in building the continental drift theory are already in: the compelling testimony of the earth sciences (SN: 5/10, p. 449). Now, another piece of evidence from the living world has been added to the growing list of animal species whose geographic distribution would be hard to explain if viewed from any position other than the theory of continental drift.

A new species of crustacean parasite, *Dolops tasmanianus* was found on a galaxiid fish in Lake Surprise, Tasmania. *Dolops* has never been found outside of South America and Africa.

Biologist George Fryer, reporting the new species in the AUSTRALIAN JOURNAL OF ZOOLOGY, says that without assuming the existence of land connections at some time or another in the past between the three land masses over which *Dolops* is distributed, Tasmania, South America and Africa, a serious question would be posed to its ability to cross oceans.

Present continental drift theory constructs a land-bridge connecting South America, Tasmania, Australia and Africa, which was broken some 100 million years ago, thus isolating the flora and fauna of the respective new land masses.

ATHEROSCLEROSIS

An animal disease model

The long-sought animal disease model for the study of coronary artery atherosclerosis in man may have been found in the monkeys of South America, say nutrition scientists at the Harvard School of Public Health.

Naturally occurring arterial lesions in the hearts of young male monkeys were found to be similar to the human disease. Electron microscope studies showed plaquing characterized by fat-laden smooth muscle cells, extracellular lipid collagen fibers, damaged layers of elastic arterial lining and other features familiar to experts of the human condition.

Initial experiments with the monkeys have succeeded in altering blood cholesterol levels by controlled feeding of unsaturated and saturated fat diets. The saturated fat diet enhanced atherosclerosis of the coronary arteries and aorta after only one month and the lesions become progressively worse after two, three and six months.

The researchers believe their study is the first of coronary arteries in experimental simian atherosclerosis using the electron microscope and comparing plaque formations with human lesions.