ZOOLOGY

Porpoises Can Teach Man Marine Diving, Detection

➤ MODERN MAN can greatly benefit from a few lessons on diving, communications and other underwater activities from some of our marine animals.

But first scientists must understand more about the unusual behavior patterns of these animals, more efficient than the best man-made machines.

Cetaceans—the technical term for whales and porpoises—can give scientists a fund of valuable information for developing our mechanical equipment, especially for target detection and identification, and for long-range underwater communication and navigation, stated Dr. Sidney R. Galler, head of the biology branch of the biological sciences division, Office of Naval Research.

Many mysteries of these intelligent sea mammals were discussed at the First International Symposium on Cetaceans Research, in Washington, D. C., conducted by the American Institute of Biological Sciences and sponsored by the U. S. Department of the Navy.

More than 30 scientists from the U. S., England, France, Australia, the Netherlands, Norway and Japan attended the four-day symposium.

The ability of a porpoise to detect and identify targets is highly interesting to the Navy, stated Dr. Galler, as is its accuracy in moving silently and rapidly towards them. Several other unusual behavior patterns of these creatures could aid research in man-made equipment, he said.

For instance, the energy efficiencies in the porpoise are much higher than in any machine. He also noted the porpoise's ability to dive and surface efficiently and silently, as well as to calculate the trajectory of a ball or fish and catch the object.

Other phases of cetacean research covered in the symposium included cetacean communications, propulsion mechanisms and capabilities in underwater detection.

The Navy is interested in these studies as part of its broad program of biological orientation to study a variety of animals that have a remarkable ability to detect and identify targets and to travel long distances to reach these targets accurately.

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BACTERIOLOGY

Sleeping Bacteria Grown To Kill Japanese Beetles

➤ A "SAFE," non-chemical pesticide is being mass-produced in an effort to halt the relentless spread of Japanese beetles.

Bacteria are being artificially grown in large quantities by industrial fermentation methods. These microscopic one-celled organisms are then induced to sleep in a dormant form called spores, which are capable of surviving in the soil and will cause deadly milky disease when eaten by the Japanese beetle.

These sleeping bacteria, unlike manufactured chemicals, are natural killers of the iridescent beetles that have caused widespread destruction in rose and vegetable gardens, as well as in fields.

Scientists of the Agricultural Research Service of the U.S. Department of Agriculture have been working at the northern utilization laboratory in Peoria, Ill., for four years to mass-produce these special bacterial spores.

For the first time scientists are using conventional fermentation methods to induce the bacteria into forming the dormant spores, points out Dr. H. H. Hall of the laboratory, who is leading the Peoria studies.

This is a very complex process, he said, with exacting requirements. For instance, the medium in which the bacteria grow must be free of glucose, and yet it must have acetate, a derivative of acetic acid, or vinegar.

The project is being developed in cooperation with the entomology research division and the plant pest control division, with contract research supplied by Illinois, Minnesota, Kansas State and Michigan State Universities.

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ENTOMOLOGY

Insects Stand Radiation Better Than Plants Do

➤ INSECTS can withstand radiation better than the plants they feed on, scientists observed after subjecting a section of forest on Long Island, N. Y., to weeks of deadly gamma rays.

From time to time nets were swept over the irradiated area at Brookhaven National Laboratory, Upton, and the insects caught were counted and analyzed.

The radiation destroyed much foliage in the area, and species of leaf-feeding insects and their parasites and predators were greatly reduced. But the number of species feeding on wood or fungi actually increased.

The increase was due to the lessening of competition for living space, said John H. Brower of the University of Massachusetts. He reported the findings at the American Institute of Biological Sciences meeting in Amherst, Mass.

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Nature Note

➤ A CHILL, frosty morning with the golden rays of sunrise flickering on the lake and the whistle of wild ducks winging their way south for the winter signal to the sportsman that fall is here.

Heading for the warmer climates of South America and the southern United States, the wild ducks leave their breeding grounds in Canada, the Dakotas and Montana, prompted by an age-old instinct that tells them to go.

The corduroy-clad hunter with his thermos of coffee, sandwiches and hunting gear heads for the duck blind in the marshy backwater or open current of the lake, hoping for his favorite—mallard, pintail, canvasback, teal or black duck, whichever it might be.

Although the number of wild ducks has decreased during the past four years due to drought, U.S. Fish and Wildlife experts expect increased numbers this year, when the hunting season opens.

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