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HARBOR SEALS WILL COOPERATE WITH SCIENTISTS IN WOODS HOLE STUDY

Training seals to reveal secrets of their breathing potentially applicable to man is a current feature at the annual summer colony gathering of scientists and laymen at Woods Hole, Massachusetts, this year, according to Dr. Paul S. Galtsoff, Director at the Woods Hole laboratory and in charge of Oyster Cultural Investigations for the Fish and Wildlife Service, United States Department of the Interior. The seal breathing experiments are being carried on in the Service's laboratory at its station in this coastal community.

Experimental procedures in studies conducted to determine the physiological adjustment to diving in mammals--"the effect on diving animals of long periods under water"--are quite complex and require the assistance of several aides, including bulky equipment consisting of a huge respirometer weighing 2,700 pounds and a formidable array of precise electrical instruments.

The present series of experiments is being carried on by Drs. Laurence Irving, Professor of Physiology, and P. F. Scholander of Swarthmore (Pennsylvania) College; and their assistants, Drs. Niels Haugaard, of the University of Oslo (Norway), and Stuart Grinnel; Misses Marie Jakus and Margaret Cardiff. The research is being financed by a grant-in-aid from Rockefeller Foundation.

Believing that the results of such studies may be of importance in understanding the conditions affecting the respiratory system of man under water, seals have been selected for the experiments because they are easily trained and soon become used to the test routines and cooperate with the worker, Professor Irving explains.

They are also good divers, being able to stay under water between 12 and 15 minutes at a time. Processes which take 15 minutes when a seal dives under water take only a minute or so in a man and the seal's reactions can be applied to general respiratory systems. Discoveries about a seal's way of maintaining itself under water for long periods and its manner of recovery from a stay under can be applied in the long run to the respiratory system of man.

The seals, shipped from Boothbay Harbor, Maine, and kept in a specially constructed pen in the Service's boat slip, breathe into a mask attached to the respirometer. The amount of oxygen used by the animal, the amount of carbon dioxide manufactured, and changes in the air held in the animal's lungs are recorded on a graph. The data, automatically recorded as the seal breathes, will later be used in long-term study of its respiration. Effects of long stays under water on the heart will be recorded by a cardiograph at the same time.

The respirometer, built by Irving in his workshop at Swarthmore where he has been studying the respiratory system for some years, was recently shipped to Woods Hole from the scientist's laboratory in Florida. Irving had already been there before coming to the Massachusetts community, conducting similar experimental work on manatees, another species of marine mammal more commonly known as "sea cow."