OCEANOGRAPHY

Neon Gas Used by Aquanauts

➤ AN AQUANAUT under 650 feet of water could quote the Gettysburg Address and be understood—if he were breathing neon gas.

Neon, the densest gas ever breathed by man, has been believed to produce narcotic effects under the slightest pressure. However, diving chamber tests conducted by Ocean Systems Inc., Tonawanda, N.Y., have shown that neon should be a safe and useful "atmosphere" for divers far below the ocean's surface.

Until now, helium "atmosphere" has been the only gas a man could safely breathe at a depth of 650 feet. It was recently used in the U.S. Navy's Sealab II project, when the divers' words were distorted beyond intelligibility.

Neon gives the voice a high-pitched metallic sound, but the words can be understood, Dr. Heinz A. Schreiner, a biochemist with Ocean Systems, reported to scientists attending the annual Federation of American Societies for Experimental Biology meeting in Atlantic City.

Now that the two atmospheres are available, man's ability to perform at great depths has been increased, said Dr. Schreiner.

For instance, it seems that two inert gases used together create less of a compression problem than one. Also, the combination may allow man to descend below the continental shelf, which lies about 650 feet below sea level.

The tests with the neon-oxygen mixture lasted only 30 minutes, in contrast to 48 hours spent with helium, so any conclusion drawn about neon is still a tentative one, said Dr. Schreiner.

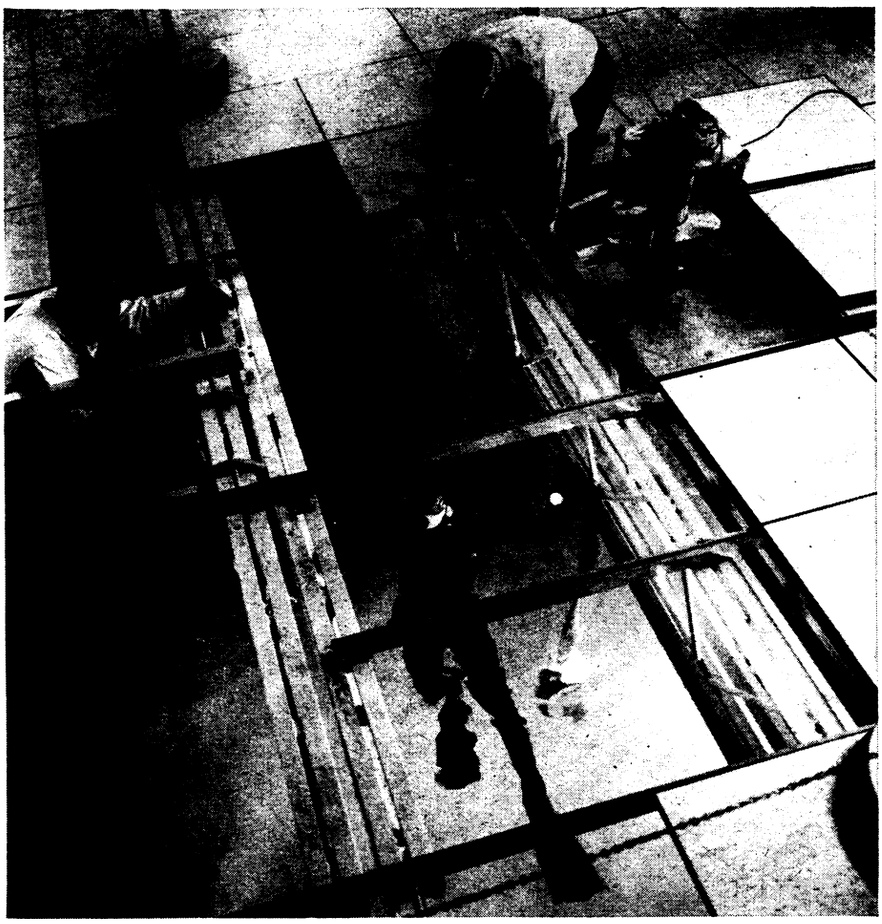
However, the divers did not get "drunk" on the gas as they would have with nitrogen, and they were able to perform mental and coordination tests without obvious impairment.

The same was true for helium, which has never been exhaustively studied for physiological and psychological effects, though it has been used several times in actual dives.

How deep can man venture into the ocean? Dr. Schreiner said that he believes man is approaching his limit at 650 feet, at least for extended dives.

Several unexplained changes such as slowed heart rate and carbon dioxide retention occur at that depth with helium, and perhaps with neon.

Dr. Joseph B. MacInnis, Dr. R. W. Hamilton, Jr. and Arthur D. Noble prepared the scientific report with Dr. Schreiner.



Westinghouse

FROGMAN UNDER GLASS—A 150,000-gallon tank is in operation at the Westinghouse Research Laboratories, Pittsburgh, to test underwater instruments and to study sonar systems and the propagation of sound waves through water. Scuba diving engineer Fred Geil is shown coming to the surface of the new facility which lies below a removable laboratory floor that permits access to the tank.

GENERAL SCIENCE

Petnapping Bill Revised

➤ THE REVISED House bill on petnapping has been "improved dramatically" from a medical point of view, according to the National Society for Medical Research (NSMR).

However, it still has some drawbacks. In particular, "licenses" would still be required of research facilities, though the item no longer implies regulation. As originally conceived, the legislation would have given the Secretary of Agriculture the authority to regulate the handling of animals in research facilities—a power hotly contested by scientific and medical groups as an obstacle to medical research.

In its amended context, "licensing" is, in effect, registration. A system of registration would be fully acceptable, an NSMR spokesman said. Congress appears to want a record of the research facilities using experimental animals. "We're willing to have some record," he said, but the term "licensing" is ambiguous and offensive.

As it now stands, the House bill would apply to animal dealers who transport, purchase, sell or handle dogs and cats intended for research and experimentation.

It would require a license for each dealer and require laboratories to buy only from licensed dealers.

The bill is an attempt to control petnapping. As such it is too restricted the NSMR believes. It covers only animals intended for research, whereas there are many other reasons for pet theft, all of which should be included.

Besides the House bill, the Senate is considering a series of bills, most of which are harder on laboratories than the revised H.R. 13881.

However, the outcome will be known only after the executive session is held. It may emerge similarly softened.