



UNDER PRESSURE

This is the decompression tank at the U. S. Navy Yard, Washington, D. C., where men may gradually be released from great pressures and thus cured of "bends." It is here that the new discovery regarding helium as a preventive of bends was made.

MEDICINE

Helium Suggested as New Preventive of "The Bends"

Study of Tendency of Gases to Dissolve in Blood Shows That Helium is Not So Soluble as Nitrogen

HELIUM, now used to lift men into the air, may find a new use in treating those who go underground or under the sea and who, working under compressed air, contract caisson disease or "bends." This appears from recent investigations on helium's solubility in the blood, reported by Drs. J. A. Hawkins and C. W. Shilling of the Experimental Diving Unit at the U. S. Navy Yard (*Journal of Biological Chemistry*).

The "bends," an excessively painful malady which affects workers who are exposed to air at high pressure, is caused by the blood's taking up a great deal of nitrogen from the air. When the workers come into normal air pressures, this forms bubbles in their veins, and may result in permanent crippling or death. Even the most modern methods of bringing men from high pressures to those of the atmosphere slowly do not entirely

obviate the danger of caisson disease.

Helium, like nitrogen in that it is an inactive gas and plays no part in the actual requirements of the body, is less soluble in water than is nitrogen. Under pressure, less would dissolve in the blood, and what did dissolve would be more rapidly dissipated if helium were substituted for nitrogen in the compressed air supplied to divers. This would cut down on the danger from caisson disease.

However, Dr. P. A. VanSlyke, Rockefeller Foundation scientist, has found that the solubility of other gases, like hydrogen and nitrogen, is different in the blood than in water. To check up on this Drs. Hawkins and Shilling have investigated the solubility of the gas in dogs' blood. They used the standard method for this kind of work, mixing air containing known amounts of helium

with dog blood, treated to prevent its clotting, in special bottles known as tonometers. When the mixing has gone on for a definite time, the remaining air is analyzed to find out how much of the helium was dissolved and so removed from the air.

Their results show that helium is just about as soluble in blood as in water, and that its use in preventing the bends is feasible.

Science News Letter, June 20, 1936

PUBLIC HEALTH

Action and Immune Serum Prevent Measles Epidemic

A WHOLE county in rural Michigan has escaped a severe epidemic of measles by a united campaign of measles prevention and modification undertaken by the county medical society.

This Hillsdale county campaign against measles, begun early this year in the face of a predicted epidemic of unusual proportions, not only lowered the county death rate from the disease but showed how effectively a concerted attack against disease can be carried out.

Dr. E. G. McGavran, secretary of the county medical society, Hillsdale, Mich., describes the county-wide use of a recent weapon in fighting measles, immune globulin, in *The Journal of the American Medical Association* (May 23).

This practical agent of preventing or lessening the severity of measles, successfully used by Dr. Charles McKhann of Harvard in the Children's Hospital, Boston, was imported from the Massachusetts State Biological Laboratories by the county medical society.

Individual physicians, conservative and critical of results, were given the "serum" free of charge. In return they promised to keep a careful record of their cases and turn these back to the county society for analysis.

To get the public behind the measles prevention program, the medical society sought newspaper publicity, made speeches before associations of parents and teachers and talked to the children about measles and its dangers.

Only four instances of the failure of the immune globulin when administered intramuscularly were reported. Dr. McGavran states that in these cases the "serum" was given nine days or more after exposure to the disease. If these four cases were thrown out because of incorrect time of administration and incorrect amount of immune globulin used, 100 per cent success could be reported in the seventy-three other cases.

Science News Letter, June 20, 1936