

MEDICINE-TECHNOLOGY

Iron Lung Has Substitute

New electronic respirator, which may prove a boon to polio patients and poisoning victims, will get its first trial this summer.

► AN electronic substitute for an iron lung will get its first trials on polio patients this summer.

This new method of giving artificial respiration, which may also be used to save victims of barbiturate sleeping medicine poisoning and electric shock, was reported by Drs. James L. Whittenberger, Stanley J. Sarnoff and Miss Esther Hardenbergh, Harvard School of Public Health, at the First International Poliomyelitis Conference in New York.

First and only patient on whom the apparatus has been used so far was a woman with a "fast hiccup," technically termed diaphragmatic flutter. But the doctors do not know yet whether hiccup sufferers in general could be helped by the apparatus. It was tried on this patient because the surgeon was opening her chest anyway to cut the phrenic nerve to her diaphragm.

For polio patients and poisoning victims the doctor would make a small cut in the patient's neck and attach a silver electrode to the phrenic nerve at that point. The electrode leads to the electronic stimulator. As soon as this is turned on, the patient loses all desire to breathe and the machine takes over. The patient does not fight it as he often does the iron lung.

The electronic stimulator can be regulated so that slow, deep breathing with plentiful intake of air goes on automatically. The machine plus its batteries is small enough to be carried anywhere and can be used in an ambulance as well as in the hospital. Nursing care of polio patients will be much easier than when the patient is in an iron lung.

To make the electronic respirator more useful to poisoning and electric shock victims, the scientists hope to find a way of concentrating and focussing the current from the machine to the phrenic nerve so that it will not be necessary to make the cut in the neck and attach an electrode.

A new way of taking blood pressure which promises to help victims of "blue baby" and other heart and circulation defects has also been developed by Drs. Whittenberger and Sarnoff.

Instead of putting a cuff around your arm, doctors using this method will insert a small rubber tube into a vein in your arm and gently push it up into your heart and through the heart into the main artery leading to the lungs. As the doctor withdraws this tube the newly devised pressure-taking machine records the different blood pressures in the lung artery and the valves and auricles and ventricles of the heart.

Pressures in these different places may vary from two to 60. But the new machine shows the small ones just as clearly, accurately and quickly as the big ones. So the doctor can tell at once where and what kind of defect in blood circulation is present. Besides helping diagnose various ailments, the machine is expected to give entirely new knowledge of the blood vessels in the lungs.

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PLANT PHYSIOLOGY

Human Saliva Inhibits Germination of Seeds

► HUMAN SALIVA contains something that prevents some seeds from germinating and checks the growth of those that do sprout, experiments by Dr. Dvora Yardeni of the Hebrew University in Jerusalem have demonstrated. (*Science*, July 16).

Dr. Yardeni treated seed wheat with saliva collected from 33 persons of both

sexes and ranging in age from six to 68 years. Some of the treatments were at full strength, others with various dilutions.

Subsequent germination behavior showed a wide range in the inhibiting power of various samples, though there was no discernible correlation with either sex or age of the contributing individual. As a rule, undiluted saliva had greatest effect, but in a few cases greater inhibition of sprouting was obtained with a 50% dilution.

The inhibiting effect seemed to be principally on the radicle, or first small root; in many cases this failed to come out at all, though there were at least beginnings of shoot development.

Dr. Yardeni was prompted to undertake the experiments by two different groups of observations made by other workers: (1) that human saliva has a bacteriostatic effect, like that of penicillin; (2) that various antibiotic chemicals have a germination-inhibiting effect on seeds.

Science News Letter, July 24, 1948

PHYSIOLOGY

Diet of Milk Causes Liver Damage in Rabbits

► CIRRHOSIS—gin-drinker's liver to you—can result from an exclusive diet of milk. Rabbits and guinea pigs have shown that nearly perfect food to be not quite perfect; it lacks something that protects the



ELECTRONIC RESPIRATOR—This experimental model, which may prove to be an iron lung substitute, is demonstrated by Drs. James W. Whittenberger and Stanley J. Sarnoff of Harvard. When produced for general use, it will be only about half this size and have fewer dials and knobs. Dr. Whittenberger at left is holding the silver electrode that is attached to the patient's phrenic nerve through a small cut in the neck.