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PUBLIC HEALTH

Wage War Against Snail

➤ **MOVING AT A SNAIL'S** pace, a war against a deadly parasitic worm, the blood fluke, may slowly be won.

A tropical snail named *Marisa* is being set against another, named *Australorbis*, which houses a lethal blood fluke and transmits it to man. By destroying the *Australorbis*, scientists hope to destroy the blood fluke.

The parasitic blood fluke causes schistosomiasis, a disease that drastically drains the victim's vitality much as does hookworm. Hookworm is not fatal, but schistosomiasis can kill a person, reported Dr. Frank J. Etges, University of Cincinnati, who has been working on the disease-bearing snail problem since 1959.

Dr. Etges has been putting the "good" snail *Marisa* into streams and swamps of the Dominican Republic, the eastern half of the Hispaniola Island in the Caribbean Sea. He hopes this snail will do what comes naturally and prey on the "bad" young *Australorbis* and their eggs.

He observed successful results in Puerto Rico last year, where the "good" snails destroyed part of the "bad" snail population.

The disease problem is serious in that area, Dr. Etges said. Skin tests of more than half of the children in the city of

Hato Mayor, Dominican Republic, have revealed blood fluke disease.

Unsettled and shifting populations in the eastern part of the Hispaniola Island may spread the blood fluke to other areas not yet contaminated. Dr. Etges believes a proposed irrigation scheme should be delayed until the snail problem is under control.

The blood flukes, which live for a while in the snail *Australorbis* and contaminate the water, enter man and animals directly through the skin. The disease may be acquired by persons bathing, doing their laundry or working in infected waters.

Schistosomiasis is prevalent in both temperate and tropical climates. Dr. Etges estimates that about five percent of the world's population may be infected with the disease. Mortality is believed to be relatively moderate, but treatment for the disease is very difficult.

Using the "good" snail *Marisa* to destroy the "bad" snail *Australorbis* may be a more permanent method of controlling the disease, than by chemical methods. Snails have a marked ability to detect very minute amounts of chemicals and will leave the treated areas.

• Science News Letter, 85:302 May 9, 1964

BIOCHEMISTRY

New Pesticide Antidote

➤ **PROMPT USE** of a newly-released chemical can save lives endangered by pesticide poisoning.

The white powdery chemical, called Protopam Chloride, has recently been released for use by doctors in emergency treatment against pesticides known as phosphate esters.

It is usually injected into the veins, but also can be taken in tablet form for mild cases of poisoning.

People accumulate pesticide poisoning in many ways. Many cases are caused by accidents, such as children playing with "empty" pesticide containers and drinking the remains, or people carelessly dousing themselves with the chemicals without bothering to read labels.

Small residues of pesticides enter the human body by way of fruits, vegetables, fish and meat which have accumulated doses of the deadly chemicals designed to destroy harmful insects and other pests.

Pesticides cause damage to the human body by stopping the action of a natural enzyme called cholinesterase, which is present in all nerves and muscles. Essential to life itself, this enzyme functions by destroying an over-abundance of the substance called acetylcholine which keeps communication open between nerves and muscles.

When a person takes in too much pesticide, the cholinesterase action stops, and too much acetylcholine accumulates. This produces a continual uncoordinated twitching of the muscles, which finally become com-

pletely paralyzed. A human being can die when the paralysis reaches the muscles of his chest and stops his breathing.

The disorder can be quickly corrected in its early stages by an injection of Protopam, distributed by Campbell Pharmaceuticals, Inc., New York. The Protopam immediately reactivates the damaged cholinesterase.

The discovery of Protopam, also called PAM or pralidoxime, was first announced in 1958 by Drs. David Nachmansohn and Irwin B. Wilson of Columbia University. Since that time, the powerful antidote has been investigated for six years in laboratories and clinics before being made available generally to doctors throughout the country.

Patients successfully treated with the antidote during the past few years include crop-dusting pilots and loaders and children who had accidentally swallowed solutions.

• Science News Letter, 85:302 May 9, 1964

SPACE

Life-Sized Space Chamber Built for Spacesuit Test

➤ **A FULL-SIZED** model of a space testing chamber will be used to test the spacesuit worn in the Apollo space project. F. J. Stokes Company, Philadelphia, is building the chamber for the Hamilton Standard Division of United Aircraft Corporation.

• Science News Letter, 85:302 May 9, 1964