

PUBLIC HEALTH

Weapon against Snails

Chemicals are discovered that may conquer schistosomiasis, number three health problem of world, by wiping out snail hosts of fluke parasite.

See Front Cover

► CHEMICALS that may conquer the world's Number Three health problem have been discovered by scientists of the U. S. Public Health Service's National Institutes of Health in Bethesda, Md.

The chemicals are snail-killers. They may stop schistosomiasis, a disease that attacked nearly 2,000 of our fighting men during the invasion of Leyte in World War II. Our forces in Korea now may be in danger of getting this snail-spread disease, though exact information on this is lacking.

Schistosomiasis is caused by a kind of flat, leaf-shaped worm called a fluke. The fluke spends part of its life cycle in the body of certain fresh water snails. Humans who bathe, drink, wade or do laundry in water containing these snails or the larval form of the flukes are likely to get the disease. The flukes produce their eggs in the human body. These get back into the water either directly from humans using the water or via drainage from land fertilized with human night soil.

The cycle can be broken and the spread of the disease stopped by getting rid of the snails. The chemicals that show promise of doing this are sodium pentachlorophenate and copper pentachlorophenate. They have been used in the textile and wood industries and elsewhere. Their snail-killing power was discovered in World War II-sparked studies at the National Institutes of Health.

Excellent results with them in field trials in swamps, lily ponds, roadside ditches and backwash river waters in Puerto Rico are now announced by Drs. Elmer G. Berry and M. O. Nolan of the U. S. National Institutes of Health and Dr. J. Oliver Gonzalez of the School of Tropical Medicine at San Juan, P. R. Dead snails on lily ponds after spraying are shown on this week's cover of SCIENCE NEWS LETTER.

Four other chemicals proved effective in the field trials, but their present price makes them impractical for this use. The two most promising ones cost about 20 cents a pound. Even shipping charges half way across the world will not bring this up much. Copper sulfate, the chemical previously used in the fight against schistosomiasis, costs 22 cents a pound delivered in Egypt.

Copper sulfate has to be applied to snail and fluke-infested waters every two or three months. Even then it does not give very good results. The two phenate chemicals probably will have to be applied only once or twice a year.

To determine just how often they must

be used and how often infected snails come back to the treated waters, Dr. Berry is going to Liberia to conduct more field trials.

Further tests of the safety of the chemicals will also be made. They kill catfish, guppies and eels, but not crayfish, the Puerto Rico trials showed. So far as now known, the chemicals will not harm humans or cattle drinking or bathing in the water. Further tests with rats and guinea pigs in the laboratory are now under way.

Schistosomiasis is the world's number three health problem, coming after malaria and tuberculosis, for two reasons, Dr. Willard H. Wright, head of the tropical diseases division of the U. S. National Institutes of Health, explained.

One is the number of persons affected, estimated at 115,000,000 persons throughout the world. In Egypt 75% to 80% of the population are infected and the disease is estimated to reduce the economy and production of the country by one-third.

Second reason is that the disease is a chronic one which makes its victims too sick and weak to work. And there is no good remedy for it. Tartar emetic, an antimony compound, is fairly effective when

given early in the disease to patients who can be protected from reinfection. But this is practically impossible for large numbers of people in Egypt, the Orient and some South American countries who have no sewage and water supply systems and must use ponds and streams for everything from drinking to laundry and irrigation.

Patients may be sick with the disease for anywhere from three months to more than two years and eventually die of it. Symptoms may vary from itching of the skin where the fluke larvae enter to fever and severe generalized pain. The eggs of the flukes are often deposited in the bladder and become the nuclei for the formation of bladder stones. Cancer of the bladder is believed also to result from this disease.

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PSYCHOLOGY

Homing Pigeon's Rival: Bermuda Lobster

► THE HOMING pigeon's latest rival is the Bermuda spiny lobster.

That lobsters are fully "aware" of their location and can return to their original feeding grounds when released elsewhere was discovered by Dr. Edwin P. Creaser and Dr. Dorothy Travis when they were at the Bermuda Biological Station.

They recovered about 20% of the lobsters released at various sites. This indicates, they conclude in the journal SCIENCE (Aug. 11), that they are probably dealing with a remarkable homing instinct.

Science News Letter, August 26, 1950



TESTING—To find out how much chemical to apply to kill the snails in this stream in Big Creek, Los Pena, Puerto Rico, Dr. Elmer G. Berry is testing the current.