

## MEDICINE

## New Polio-Like Disease

Isolation of a virus has been made which produces symptoms in its victims which resemble mild polio. The disease was found in 1948 polio-diagnosed patients.

► POLIO symptoms may no longer point to polio infection but to a new virus disease which resembles it. Isolation of a virus which produces symptoms similar to the non-paralyzing form of polio was announced by Yale University.

Discovery of the virus which has up to now been masquerading as polio was made in patients living in cities hard-hit by polio last year, which was the second worst polio year on record.

Its existence was first suggested by Gilbert Dalldorf and Grace Sickles of the New York State Department of Health in Albany, N. Y. The new findings, which confirm the original discovery, were made by Drs. Joseph L. Melnick, Ernest W. Shaw, and Edward C. Curnen of the Yale School of Medicine and are reported in the PROCEEDINGS OF THE SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE (July).

Little is known about the new disease caused by a virus which has as yet no name. But it has been found to break out

at the same time as polio in the summer season. The scientists believe that a fairly large number of patients were afflicted with the new disease last year and were falsely diagnosed as having polio.

Basis for this belief was the discovery of the virus in the sewage of last year's polio epidemic areas. Six cities—Hartford,

Norwalk, and New Haven, Conn., and Greensboro, High Point, and Winston-Salem, N. C.—yielded the virus on examination of their sewage. Moreover, flies tested for the new virus in Hartford, Conn., and High Point, N. C., as well as in the lower Rio Grande Valley of Texas, were found to be infected.

Animal experiments revealed that infant mice are susceptible to the new virus but older mice are not, nor is the monkey which is used for polio research. The chimpanzees, on the other hand, became infected but were not visibly sick.

There are many strains of the new virus which at present fall into two basic types unrelated to each other or to the polio virus, the Yale scientists declared.

Science News Letter, August 27, 1949

## MEDICINE

## Hormone May Rejuvenate

Cortisone, besides showing promise against arthritis, has been found to renew some body tissues broken down by the aging process.

► THE fountain of youth for aging people and a defense against more of the chronic diseases than arthritis may be found in

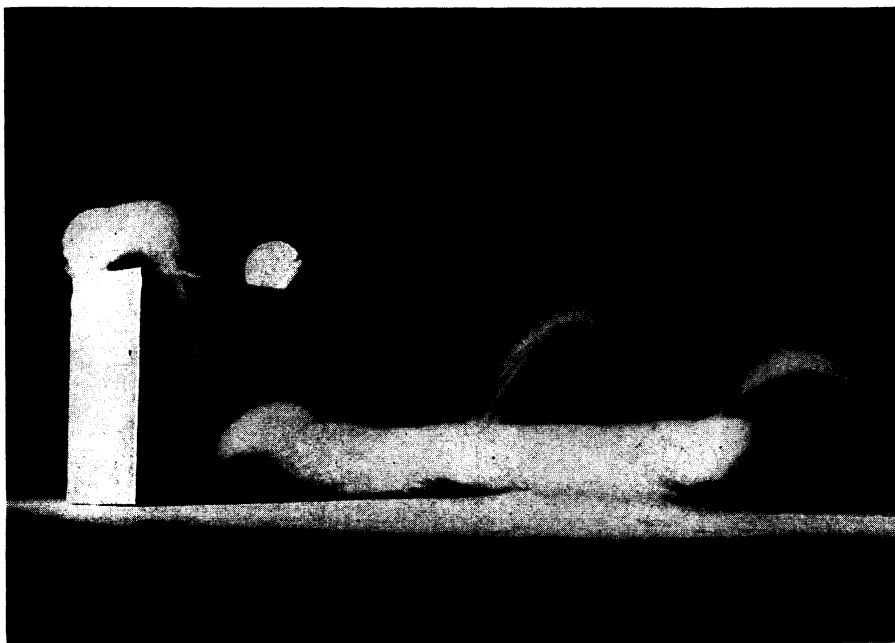
cortisone and similar hormones so dramatically effective in making the rheumatically crippled get up and walk.

That is the reason that there is an intensive search for new raw materials for synthesizing this adrenal cortical hormone. That is why the U. S. Public Health Service is asking \$1,750,000 in emergency money to speed the medical research and investigation.

There is official excitement over the fact that a vine, growing of which is illegal in Africa, has seeds that under certain conditions contains a substance, called 11-oxy-steroid, from which cortisone can be made. This is true despite the fact that it may take years to explore, prove and cultivate the strophanthus plants whose seeds seem to substitute so conveniently for the bile of slaughtered cattle that is now the starting point of cortisone synthesis.

Relief of 7,000,000 arthritics and over 100,000 rheumatic fever patients in the USA is the obvious but distant goal, but of deeper import is discovery that the substance that treats the patients so effectively actually seems to restore some of the tissues of the body that have been supposedly irreversibly changed by the inevitable process of aging. Cortisone seems to have a beneficial effect upon the metabolism of the collagens, the fibrous proteins that give support to the skin, tendons and bones.

In Mayo Clinic human experiments, much to the surprise of the investigators, old joints that were stiff were loosened up and the connective tissues were found to be physiologically renewed. This is the basis of renewed hope that a discovery



**SUPER-COLD TEMPERATURE**—Temperatures ranging to within a degree or so above absolute zero—459.7 degrees below zero on the Fahrenheit scale—have been made possible by a new “push-button” laboratory headed by Dr. Aaron Wexler of Westinghouse Research Laboratories. This will help scientists probe into how matter behaves at super-cold conditions. Here the tennis ball at left has been dipped in liquid nitrogen, 340 degrees below zero Fahrenheit. The ball at right is in its natural state. The super-cold ball rolls without bouncing when pushed off a pedestal while the other ball bounds.

even beyond the successful treatment of the rheumatic diseases has been made.

Cortisone is also being tried, experimentally, in certain kinds of cancer.

The supply of this hormone, produced by Merck and Co. in what is called the most complex and difficult chemical synthesis of commercial or medical value, is still extremely small. Only a score or two of patients, who have to be given the drug every day, have been treated. The drug is of course priceless, but it costs at least \$20 a day to sustain a patient with 100 milligrams of cortisone which is valued at \$200 to \$400 a gram. Next year production from ox bile (it takes 40 cattle to produce enough for one day's treatment) will supply about 2,000 to 2,500 patients.

If some substitute for the bile from the slaughter houses could be found, the quantity might be larger.

In 1915 Drs. Walter A. Jacobs and Michael Heidelberger of the Rockefeller Institute in New York isolated from the seeds of strophanthus a chemical substance they called sarmentogenin. Cortisone's chemical ancestor, 20 steps closer to the final product than the bile acid starting point, was found to have the essential chemical structure duplicated in the African seed chemical. Here then was a chance to produce the final hormone from a plant that could be cultivated like other crops with a supply independent of the demand for meat and the amount of cattle slaughtered.

A strophanthus search is in progress. A Swiss group under Prof. Tadeus Reichstein of Basle was in the field first, because they were looking for a plant source for sex hormones that mean so much to the happiness of the human race. They found the desired plants and seeds in Africa. But there are complications for there are about 30 species of strophanthus and only one, *Strophanthus sarmentosus*, appears to produce the desired 11-oxy-steroid chemical grouping and then only under certain

growing conditions and at certain times of seed growth.

A two-man expedition, Dr. John T. Baldwin of the U. S. Department of Agriculture and Dr. Erich Mosettig, of the U. S. Public Health Service, are in Basle beginning to track down strophanthus. First checking up the Swiss work, which has actually produced a small amount of cortisone from strophanthus, Dr. Baldwin will then collect plants, seeds and cuttings in the African area between Liberia and the Cameroons where the vine is supposed to grow best.

Natives are prohibited from raising the vine because they have used it in making an arrow poison and in making a brew with which charged criminals were tried—usually to die of the powerful heart-stimulating glucocides in the potion they were forced to drink (not the same chemicals used as the cortisone raw material).

So Dr. Baldwin will be searching mountain tops and isolated trees for the illicit vines to be brought back to this country for the sake of medicine. Probably cultivation of the plant will be legalized under controlled conditions, just as poppies are raised for opium.

Some years ago Dr. David Fairchild, veteran plant explorer, sent back from Africa some strophanthus plants and they were grown in Florida, Cuba, Puerto Rico, and the Canal Zone. All of them flowered beautifully but strangely only the one near Coconut Grove, Fla., bore seeds. These plants are being studied anew but they may not be the right species.

All plant and animal sources for steroid chemicals out of which cortisone could be made are being sought. Chemists believe they can make the hormone out of mothballs and vinegar (naphthalene and acetic acid) but it would be a long and expensive process. They would rather start with something upon which nature has already done most of the synthesizing.

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## Words in Science— SYMPTOM-SYNDROME

➤ A SYMPTOM, you say it simp-tum, is a sign of disease or of some physical or mental condition. It is what the doctor looks for in order to diagnose what is wrong with his patient.

A syndrome, pronounced sin-drome, is a set or pattern of symptoms that occur together—the total of all the signs that are evident in the presence of any disease or condition.

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# Question Box

### DENTISTRY

What is the new theory on how tooth decay starts? p. 135.

### ENGINEERING

What is the purpose of a device which writes a "daily diary in dust"? p. 134.

### GENERAL SCIENCE

What conclusions has a committee on civil liberties for scientists drawn? p. 133.

### MEDICINE

What new light has been thrown on symptoms resembling mild polio? p. 131.

Photographs: Cover, National Bureau of Standards; p. 131, Westinghouse Research Laboratories; p. 133, Dr. A. A. Allen; p. 135, General Electric Co.

What shows promise of yielding material for the anti-arthritis hormone production? p. 131.

When is malaria expected to be wiped out in this country? p. 140.

### METEOROLOGY

What are the locations of ten weather stations in the North Atlantic? p. 141.

### PSYCHIATRY

What new profession is being pioneered? p. 141.