

MEDICINE

Mold Gives New TB Drug

Cycloserine, obtained from soil mold of the same family as yielded streptomycin, worked where other "wonder drugs" had failed.

➤ A NEW soil mold chemical for the fight against tuberculosis has been discovered.

Whether it will prove a big gun to finish the fight on the white plague will be determined by trials now starting in Veterans Administration hospitals around the nation.

The chemical is called cycloserine (pronounced with accent on the last syllable to rhyme with serene).

The soil mold that produces it belongs to the same family of organisms that produce streptomycin, famous since 1946 as a TB remedy.

Cycloserine was discovered by Roger Harned and Eleanor Kropp, microbiologists at Commercial Solvents Corporation laboratories, Terre Haute, Ind. The company has tradenamed it Seromycin.

Both Commercial Solvents and Eli Lilly of Indianapolis who will put it up for medical use and market it are being extremely cautious about claims for the new drug. Plans for putting it on the market depend on the results of the pilot studies now to be made by VA as part of its world-famous TB chemotherapy program.

Cycloserine has been given for a three-to-four-month period to 37 very sick patients at New York's Metropolitan Hospital. These patients all had tuberculosis of the lungs and 29 were chronic patients with far advanced

active tuberculosis. Intensive treatment with streptomycin, PAS and isoniazid for more than a year had not helped them.

Of these sick patients, 36 looked and felt better after cycloserine treatment. X-rays showed some improvement in infected lung areas in 28 patients. Thirty of them gained four to 14 pounds over a 16-week period. All who had been feverish lost their fever. Simple smears of sputum and stomach juice concentrates, previously positive for tuberculosis in all 37 patients, became negative in 30.

These encouraging preliminary results were reported by Drs. Israel G. Epstein, K. G. S. Nair and Linn J. Boyd of New York Medical College, New York, at the 14th VA-Army-Navy conference on tuberculosis at Atlanta, Ga., held in cooperation with the National Tuberculosis Association.

The new soil mold chemical was tried in infections of the genito-urinary tract by Drs. George R. Nagamatsu and Lois Lillick of New York Medical College and Dr. Russell D. Herrold of the University of Illinois College of Medicine, Chicago. They got good results in 46 of 62 stubborn infections which had resisted all other treatment.

These last results were summarized by Dr. Henry Welch of the U. S. Food and Drug Administration, Washington, D. C., who

also reported his own test tube studies of cycloserine. These showed it effective against a wide range of microorganisms, though its test tube effect was found to be relatively low.

Cycloserine, or Seromycin, may be able to cure tuberculosis by itself, though in the VA pilot study it may be given combined with streptomycin, PAS or isoniazid. The pilot study will be limited and intended to show chiefly the most effective dosages and combinations for use of the drug as well as its clinical effects on the patients.

The drug has some toxicity and Dr. Epstein reported it had to be stopped because of this in four of the patients in his preliminary trials.

While streptomycin, PAS and isoniazid give doctors very potent weapons against tuberculosis, they still hope for a drug or combination of them that will cure every case, even the very stubborn and dangerous ones in which the germs attack the brain or spread through the blood to all parts of the body. These forms are known as tuberculous meningitis and miliary tuberculosis respectively.

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CHEMISTRY

Rare Elements Useful For Atomic Reactors

➤ TECHNETIUM NOW joins zirconium as material for building atomic reactors.

Ability of technetium to soak up slow neutrons is revealed in the Atomic Energy Commission's 17th semi-annual report. This ability is an important new kind of information for designers of nuclear fission machinery, important because these materials themselves may take part in the radioactive disintegrations going on inside the reactor. Technetium appears to be like graphite, boron, cadmium, and zirconium in absorbing neutrons harmlessly.

Technetium is a "ghost" element, made in atomic reactors and occurring in fairly large quantities among the fission products. It does not occur in appreciable quantities anywhere else on earth, but is found in certain kinds of stars. All 15 forms of the element so far detected are radioactive. The half life of the most stable among its 15 isotopes is about 10,000 years.

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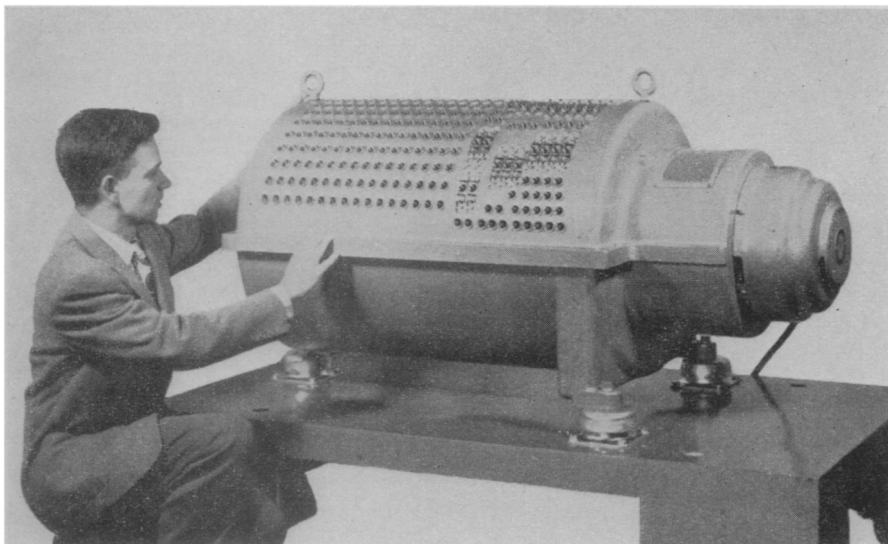
AGRICULTURE

New Orchardgrass For Forage and Hay

➤ A NEW variety of orchardgrass is being farmed out to state experiment stations in a move to get the seed into the hands of farmers in the shortest possible time.

Named Potomac, the grass is described by the U. S. Department of Agriculture as being superior to "standard varieties from the viewpoints of greater resistance to rust, greater hardiness, leafiness, and overall quality as forage or hay."

Science News Letter, February 19, 1955



MEMORIZES WEATHER—A revolving drum inside this unit can hold 2,000 messages containing data on weather and air traffic control. The information is fed into the device by a teletypewriter and would be immediately available to airport control towers. It has been estimated that 15 such units could service all the major air traffic centers in the nation. The device was developed by Remington Rand, Inc., for the Air Navigation Development Board.