

MEDICINE

Sulfone Drug Effective Weapon Against Tuberculosis

Exhaustive Studies in Test Tube and on Guinea Pigs Shows Di-Amino-Di-Phenyl-Sulfone "Retards" Germ

NEW hope that tuberculosis, like pneumonia, may be successfully treated with a chemical relative of sulfanilamide is raised by a report published by U. S. Public Health Service research scientists.

Following exhaustive study both in the test tube and in guinea pigs, a drug so far known only by its chemical name di-amino-di-phenyl-sulfone, "appears to have a definitely retarding influence" against the tuberculosis germ. Further, the dosage necessary to slow up the indomitable bacillus seemed within the margin of safety—it did not kill the animals.

With this drug as a starting point, Dr. M. I. Smith, Public Health Service pharmacologist, who first used it against the human type of tuberculosis, aims to develop derivatives more hostile to tuberculosis and safer to use in human patients. So far the drug has been tested

only with animals.

A derivative of di-amino-di-phenyl-sulfone, named promin, is being tried in human tuberculosis cases by scientists of the Mayo Clinic, but results have not yet been reported.

Dr. Smith and his associates, Dr. E. W. Emmart and Dr. B. B. Westfall, included promin in their test tube and guinea pig experiments, but found it inferior to the parent drug.

One of the derivatives for which the Public Health Service scientists are searching may, it is hoped, become the specific drug for tuberculosis. So far, the tough, waxy coated tuberculosis germ has defeated every attempt to kill it in the human host. There is no specific treatment for tuberculosis, despite recent medical progress which has reduced the number of cases and the death rate.

Dr. Smith and his associates tested di-amino-di-phenyl-sulfone together with

22 other drugs in laboratory cultures of the human strain of tuberculosis bacillus. The di-amino-di-phenyl-sulfone inhibited growth with the least amount of drug. In tuberculous guinea pigs only 56% died when assisted with the drug, as compared to 81% that received no drug. Further, the extent of the disease in the animals treated with this drug was only 0.9% as compared with 2.3% when no drug was given. In this series, 97 animals were tested over a period of 107 days.

In their final estimate following these experiments, the Public Health Service researchers conclude:

"All the experiments taken together strongly indicate di-amino-di-phenyl-sulfone the most effective agent, (both in the test tube and in the animals)."

Science News Letter, February 28, 1942

INVENTION

Bottlenecks Broken By Use of Inventive Brains

See Front Cover

FAMOUS Yankee ingenuity is speeding up the conversion of industrial plants for war work by improvising tools from available materials and by adapting old tools to new uses. How brains were thus used to break bottlenecks is told by a War Production Board report.

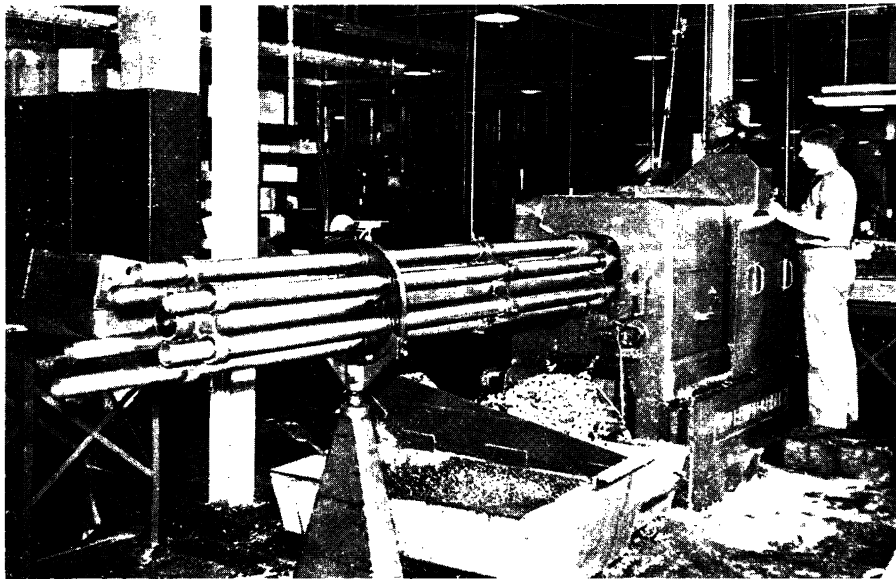
One Midwestern plant stopped making electric fans and motors and prepared to make gun turrets and shell boosters. Officials did not sit down and wait for months or years to secure tools from a machine tool market already glutted with orders from war industries.

They set their wits to work on what they already had and sent inquiries to a number of smaller manufacturers throughout the region asking them to outline their facilities.

Holes had to be burred inside the shell boosters. It would have taken two months to wait for delivery of a machine designed for this purpose. But in just 30 hours a homemade machine was rigged up to do the work. It makes use of a dentist's burr just like the one you have probably had painful acquaintance with in your own dentist's office. And it works.

In 60 hours, the plant's men had built a machine that would ream two holes simultaneously in the shell boosters.

With a fan base already on hand and a couple of pieces of machine tool, the plant superintendent devised another machine that would check closely the accuracy of the threads on the shell



NOW MAKES SHELL BOOSTERS

This lathe in a midwestern company plant, which formerly made spur gears, worm wheels and commentator rings, has been converted to war use by being tooled with an eccentric spindle and thread rolling attachment for the production of 20-millimeter shell boosters. This is an official photograph from the Office of Emergency Management.