

## MEDICINE

# New Sulfa Drug May Prevent As Well As Cure Meningitis

## War-Censor-Delayed Reports Tell of Significant Advances Toward Control of Diphtheria As Well

**H**OPE that sulfadiazine, one of the newest of the sulfa drugs, may prove the means of preventing as well as curing meningitis appears in a war-censor-delayed report just made public.

Significant advances towards the control of diphtheria and scarlet fever as well as meningitis, were made in Halifax, N. S., this winter during epidemics which threatened to slow that prize port's steady flow of supplies to embattled Britain. The war plague fight was made by 11 American men and women comprising the Harvard Medical School expedition. Under the leadership of Dr. J. Howard Mueller, this expedition spent four weeks in the disease-ridden city studying these infections and helping local authorities to bring them under control.

The story of the expedition can be told now because the menacing epidemics have been checked; because measures have been taken which make their recurrence unlikely; and because the advances made are going to be used to strengthen America's defenses against disease.

Sulfadiazine proved the hero in the meningitis situation. This disease was never as rampant in Halifax as was diphtheria, but it was a constant smouldering threat. The new sulfa drug was used by Dr. John H. Dingle, of the Harvard expedition, to control the situation. It appeared "to have certain advantages" over other sulfa drugs used against meningitis and was felt to be especially valuable in solving the important problem of carriers of the disease.

This is because sulfadiazine not only helps the patient to get well but apparently swiftly banishes the meningitis germs from his nose and throat, where they may lurk long after he is well, constituting a hazard to other persons.

"The suggestion is obvious," Dr. Mueller reported, "that healthy carriers may be similarly cleared up."

This theory could not be verified experimentally in Halifax but it has since

been confirmed by an Ottawa physician who studied troops in that area. It is an entirely new idea and one completely contrary to the experience of the last war. It may, doctors believe, be the beginning of the end of the carrier problem in meningitis.

A new and better technic for diagnosing meningitis which has certain advantages making it "particularly suitable for military use under field conditions" was developed through a new culture medium for growing meningitis germs prepared by Dr. Mueller.

A better method for dealing with the problem of protecting adults against diphtheria and more knowledge about scarlet fever, including discovery of a new strain of scarlet fever germs, are other advances made by the expedition.

The official report is being forwarded to the Surgeon General of the U. S. Public Health Service so that this na-

tion may profit from the Halifax experience in fighting war plagues.

*Science News Letter, April 5, 1941*

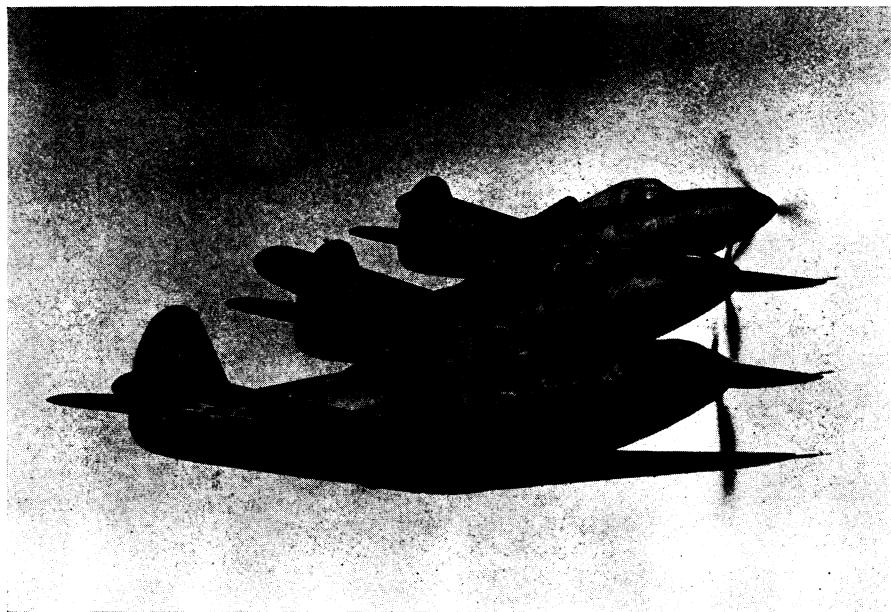
## PUBLIC HEALTH

## Tuberculosis Is Fought Among Defense Workers

**U**NCLE SAM is going to great lengths to make sure that among the million or more young men in army training camps there will be none whose health is not good enough to stand the rigorous life and activities of a soldier in training.

Behind the training camp front is another vast and growing army of men and women working in the factories that produce defense weapons. They also are subject to certain strains on health and endurance, strains which will be increased by the speed-up of production for defense. These extra strains, plus the fact that many of the industrial workers will be living in crowded quarters, at least temporarily, and may be deprived of certain necessities by mounting prices, are conditions that threaten health in many ways and particularly carry the threat of increased spread of tuberculosis.

The way to stop the spread of tuberculosis is to find the people who have the disease and keep them from contact with others while the disease is in the infectious stage. In the early stages of



### PRECISION

*This difficult close-order flying maneuver is being executed by three Army Air Corps flyers from Selfridge Field who had never seen this Aeracobra Interceptor Pursuit plane until the day before. The photograph was taken by the Bell Aircraft Corp., who certify: "This is an actual photograph, no retouching, no super-imposing, so help us!"*

this disease, however, the patient often does not know he has it. In fact, he may not even feel sick. So he fails to get treatment for himself at an early stage when it can be most helpful, and fails to stop the spread of his germs to other persons.

In this early stage, long before the patient is coughing or spitting blood or having night sweats or feeling tired, X-ray pictures can detect the disease. Consequently, tuberculosis authorities urge more widespread use of X-rays to

find the patients who need treatment and to check the spread of tuberculosis.

The National Tuberculosis Association is conducting its annual Early Diagnosis Campaign, to remind people generally of the importance of finding the unsuspected tuberculosis patients in every community and every home.

One place to start looking for unsuspected tuberculosis, the association believes, is in the army of defense industry workers.

*Science News Letter, April 5, 1941*

which bacteria digest and get nourishment from their food. Sulfanilamide, according to Dr. Long's theory, must compete with one or both of these other chemicals for a place in the bacterial enzyme system. If it wins the chemical war and gets to the enzyme system first, the germs cannot flourish and the patient can overcome them and get well.

*Science News Letter, April 5, 1941*

#### MEDICINE

## Sulfa Drugs Able to Cure by Chemical Warfare in Germ

### Believed Antagonistic To Chemical Playing Role In Bacterial Enzyme System Essential To Germ's Life

**S**ULFANILAMIDE and the other sulfa drugs cure by waging and winning chemical warfare within the bodies of invading disease germs. This explanation of how the sulfa drugs probably work was suggested in a Sigma Xi lecture at Mississippi State College by Dr. Perrin Long, professor of preventive medicine, Johns Hopkins Medical School.

Dr. Long is an authority on the sulfa drugs, being one of the first American physicians to use them and the man chiefly responsible for introducing Pron-tosil, granddaddy of the sulfa drugs, to this country.

"Two main theories as to the mode of action of sulfanilamide have been evolved," Dr. Long said.

He favors what he calls the "inhibitor theory," according to which chemical warfare is waged in the invading disease germ's body.

The warfare is between the sulfa drug and one or both of two other chemicals, para amino benzoic acid and methionine. The first of these has been found in yeast and is very likely present in all living things, including bacteria. Scientists have recently found that it has to a high degree the power of inhibiting or stopping sulfanilamide's action against disease germs. It does this both in the test tube and in the infected animal.

Methionine is one of the essential amino acids from which proteins are built. It is found in normal blood and probably is also present in body tissues.

Like para amino benzoic acid, methionine can stop the bacteriostatic activity of sulfanilamide.

One or both of these chemicals may play a role in some enzyme system by

#### PSYCHOLOGY

## Psychologists Honored For Research on Vision

**O**NE of the highest honors in the field of psychology, the Howard Crosby Warren Medal, was awarded by the Society of Experimental Psychologists to Prof. Clarence H. Graham, of Brown University.

The award was made for Prof. Graham's notable researches in the field of vision. He has been particularly interested in exactly what happens to the eyes and to the nerves involved in vision when light strikes the eye or when the intensity of light suddenly changes — as when you step from bright sunshine into a darkened theater.

Prof. Graham was recently appointed



#### HONORED

*Dr. Clarence H. Graham, of Brown University, shown here at work in his laboratory, was awarded the Howard Crosby Warren Medal for his distinguished research in the psychology of vision.*