

## PUBLIC HEALTH

# Meningitis Preventive

Sulfadiazine has cut down meningitis deaths in the Army by 90%. Epidemics can be warded off by giving the drug to all members of a unit.

➤ A SAVING of 90 out of 100 soldier-lives from meningitis death has been achieved by sulfadiazine, figures from the Office of the Surgeon General show.

The meningitis death rate in our Army in the present war is less than 3%, whereas it was 93.2% in the Revolutionary and Civil Wars and 39.2% in World War I, the War Department announced.

The germ that causes meningitis is so susceptible to sulfadiazine, the Army's commission on meningitis has found, that as little as two grams (about one-fourteenth of an ounce) of the drug will banish the germs from the nose and throat of most persons for a period of several weeks.

"This fact makes it possible to head off epidemics by the occasional adminis-

tration of sulfadiazine to all members of a military unit, especially under such circumstances as embarkation on a troopship," the War Department announcement states, crediting the explanation to Dr. John J. Phair, of the School of Hygiene and Public Health, Johns Hopkins University, who heads the commission on meningitis.

"Of 100 soldiers tested in experimental work at Fort Meade, Md., 92 showed presence of the germs on several occasions during the test period of 68 days. None was sick, apparently because the majority has an immunity to the infection. It is only when large numbers of men, some immune, some not, are thrown together, as in military camps, that epidemics occur."

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## ENGINEERING

# Laboratory Dust Storms

Volcanic ash from Arizona is blown onto Army trucks for as long as 50 hours to test their wear from dust and sand.

➤ AUTOMOTIVE engineers are creating artificial dust storms to supplement field tests of Army motor cars and of dust-proofing devices, the National War Materiel meeting of the Society of Automotive Engineers was told by R. P. French, of the Studebaker Corporation. The controlled storms serve the purpose better than the natural variety. Mr. French explained that storms may be produced upon demand without relying upon the whims of the weather, and dust or sand of any type and from any part of the world may be used in the tests.

A dust-test room, for Army engineers and the SAE War Engineering Board, was built for the purpose of studying how to protect motor vehicles operated in dusty regions against excessive wear caused by dust and sand.

In a typical test, an Army truck is placed in the dust-test room, fan blades and compressed air jets blow up the

dust for as long as 50 hours, while engineers watch from a special observation chamber.

The dust used in most tests is a highly abrasive pure volcanic ash, obtained near Phoenix, Ariz. Sand-blast refuse, practically pure silica, is also used.

Mr. French reported results as showing that dust passes through the air cleaners of engines in great quantity and causes as much cylinder wear in 1,000 miles of test operation as would result from 20,000 miles on the road.

Generators and starters become packed with dust, which sometimes wears away insulation from wires and makes the starter inoperative. Clutch housings fill with dust, and ignition coils and high-tension wires attract a coating of dust which holds moisture.

Brakes also collect dust, but little reaches wheel bearings. In spite of closed doors and windows, Army truck cab interiors get a quarter-inch dust layer.



**FM WALKIE-TALKIE**—The range of this new radio exceeded all expectations during training operations and is regarded by the Signal Corps as one of their most valuable items of radio equipment.

Samples of oil, taken after a 50-hour test, showed sediment by volume to be as high as 3.8%, in the transfer case.

Mr. French concluded that there are indications the dust room will facilitate developing methods for protecting passengers as well as mechanical parts from dust and damage.

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## Records Detonation

➤ DETAILS of the design, development, and operation of a new indicator for measuring vibration in engines, recording detonation, measuring pressures in guns, and even making jet propulsion studies were described by C. E. Grinstead, R. N. Frawley, F. W. Chapman, and H. F. Schultz, all of Research Laboratories Division, General Motors Corporation, at the National War Materiel meeting.

Not only does the new indicator take measurements, it was explained, but used in combination with a camera, it makes permanent visual records of engine performance.

The electrical condenser-type indicator was described as being small enough to permit installation in modern engines, so rigid as to eliminate the effects of vibration, and so critical as to register manifold pressure changes of as high as 6,000 cycles a second. (*Turn to next page*)