

## MEDICINE

## Two Midge-Repellents Prevent Sandfly Fever

► BOTH DIMETHYL phthalate and a pyrethrum vanishing cream applied to the skin are effective repellents for the hairy, two-winged midges that carry sandfly fever, two Army officers and a civilian physician, Major Albert B. Sabin, Lt. Col. Cornelius B. Philip and Dr. John R. Paul, of New Haven, Conn., report (*Journal, American Medical Association*, July 8).

The disease, also known as Phlebotomus fever and pappataci fever, is of military importance because "it occurs in many parts of the world where troops are stationed and because it can incapacitate large numbers of persons at a time for seven to 14 days," the scientists point out.

It is a disease of hot, dry seasons, is caused by a filtrable virus, and has for its chief symptoms fever of two to four days, usually, with severe frontal headache, pain in the eyes, sensitivity to light, pain in the back, legs and arms, and changes in the white blood cells. It may be confused with dengue fever, which is spread by mosquitoes. There was some question whether an outbreak of a fever among American troops in Sicily was dengue or sandfly fever, but further investigation established this as sandfly fever.

Immunity or resistance apparently is developed, at least by some persons. Immunity may also be achieved by a virus irradiated by ultraviolet light.

*Science News Letter, July 15, 1944*

## CHEMISTRY

## Synthetic Tires of Rayon Are Cool and Last Longer

► SYNTHETIC automobile tires made with rayon cord are cooler-running, longer-lived, J. E. Hale, of the Firestone Tire and Rubber Company, reported to the Society of Automotive Engineers meeting in Philadelphia.

Synthetic tires develop higher temperatures than natural rubber tires under identical operating conditions: the higher the speed, the greater the load, the greater the underinflation, the more this heat is built up.

Results of extensive tests conducted at the Firestone Research Laboratory show that tires made with cotton heat up faster, to higher temperatures, than those made with rayon, the speaker reported.

In general, the air temperature in the tube is from 10 to 20 degrees Fahrenheit higher where cotton is used.

Pointing out that there will not be enough news tires this year to go around, Mr. Hale suggested that synthetic tires be sued so that they can be retreaded two, three, or even four times.

Mr. Hale made these recommendations to get the most out of synthetic tires: Put a limit on the car load, never carry a heavier weight than the tires will stand. Limit the speed; the higher the speed, the higher the temperature builds up. Avoid high sustained cruising speed; short bursts of speed do little harm. Check the tire pressures often to make sure that the proper pressure is in each tire; underinflation causes high heat to develop. Do not overinflate; overinflation places the cords under a higher tension and they are more likely to break. Retread before the tires are worn too far to take retreading.

*Science News Letter, July 15, 1944*

## MEDICINE

## Rice Diet Helps Patients With High Blood Pressure

► MUCH ATTENTION is being attracted by the report of a diet that seems to help patients with high blood pressure and kidney disease.

Dr. Walter Kempner, of Duke University, developed the diet and reported it to the American Medical Association. It consists solely of rice, fruit juices, sugar, vitamins and iron.

Dr. Kempner's theory is that one of the kidney's functions, that of deaminating the amino acids of protein, is disturbed by lowered oxygen supply and the result is high blood pressure. The rice diet was developed to reduce the amount of protein the kidneys have to handle and thus lower the amount of harmful, abnormal substances which he believes causes the high blood pressure.

Not all patients benefit from the diet, though no ill effects from it have been seen. Blood pressures were reduced in about 60% of the patients, he said. The diet, like that for diabetes, must be prescribed individually for each patient so far as amounts of rice and the other ingredients are concerned.

One nutrition authority listening to the discussion on whether the patients would be getting dangerously little protein from the diet, pointed out that the protein in rice differs from that in other cereals.

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# IN SCIEN

## MEDICINE

## Use of Boric Acid Ointment On Burns Is Dangerous

► A WARNING against the use of boric acid ointment or saturated solution on burns was given by Lieut. Carl C. Pfeiffer, Ensign Lois F. Hallman and Lieut. I. Gersh, of the U. S. Navy at the meeting of the American Medical Association.

Enough boric acid to produce poisoning can be absorbed from 10% boric acid ointment, they found. As much as 75% may be absorbed when a 5% solution is used to wash out body cavities. Repeated doses result in the acid being deposited in the brain, fat and liver. Death results from a shock-like syndrome after large doses and from general inanition after medium doses.

After the Coconut Grove disaster in Boston, when boric acid ointment was used under pressure dressings on the victims' burns, the National Research Council issued an official recommendation for its use on burns, but this has since been withdrawn.

Since boric acid is a weak antiseptic, the Navy officers suggest use of more active and less potentially harmful ones.

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## MEDICINE—AERONAUTICS

## Evacuation by Plane Saves One-Third of Wounded

► DEATHS FROM battle wounds can be reduced by almost one-third (30%) if air evacuation can be used in all our major combat work. This is the firm conviction of Vice Admiral Ross T. McIntire, surgeon general of the U. S. Navy. "Casualty records still continue to be excellent," he reported at the meeting of the American Medical Association.

Shock is the "greatest single bugbear we are called upon to face," he said, citing experience at one field hospital where the doctors found that the two-mile ambulance ride over a very rough road from the airstrip to the hospital was responsible for the shocked condition in which patients arrived at the hospital. From such experiences doctors are learning ever better methods of handling.

*Science News Letter, July 15, 1944*

# CE FIELDS

## MILITARY SCIENCE

### Blockbusters Create Artificial Tidal Waves

➤ SIX-TON blockbusters now create artificial tidal waves that destroy Nazi shipping along the coast of Europe. These heavy bombs, capable of making earth craters over 40 feet deep and 110 feet in diameter, have a devastating effect on boats when dropped in enclosed harbors, tidal basins and boat pens.

Artificial tidal waves are being used particularly in raids on the Nazi E-boat pens at Le Havre and Boulogne. The E-boats are similar to the U. S. Navy PT boats, and have been used by the enemy in attempts to stop the flow of supplies from England into Normandy.

The colossal waves set up by the bombs lift the E-boats clear out of the water and seriously undermine the structure of the large Nazi concrete boat pens.

Reconnaissance photos show that out of 20 boats the only shipping to remain intact after one of those "tidal wave" raids were a tank landing craft and six small auxiliaries. Five wrecked or partially submerged ships 150 to 200 feet long, and eight others of 100 to 150 feet were photographed.

In many instances E-boats simply vanish after one of these bombardments. "When all factors are taken into account," says the British official report, "it may be confidently asserted that they did not leave the harbor, but were sunk."

The new bombing technique was developed after R. A. F. bombers noticed that the greatest havoc seemed to be caused when the bombs missed the pens and fell in the water.

*Science News Letter, July 15, 1944*

## ECONOMICS

### Post-War Rubber Problem Predicted For Four Years

➤ THE WORLD may be facing a tight rubber situation for nearly four years after the war, unless we see fit to expand further our output of synthetic rubber. This view was set forth by Dr. R. P. Dinsmore, vice-president in charge of research and development of the Good-year Tire and Rubber Company, at the meeting of the National Association of

Purchasing Agents in New York City.

This is quite a different view from the one frequently expressed that the post-war market will be flooded with cheap crude rubber which will drive synthetic rubber off the market.

"It is important," Dr. Dinsmore pointed out, "because it means that synthetic rubber must not only meet our war needs, but must be able to cope with a large portion of our post-war requirements and all the changed conditions under which rubber products will be used."

Proceeding on the assumption that the war will be essentially completed, by a United Nations victory, by the end of 1946, Dr. Dinsmore estimated that the world's rubber demand may rise to 1,900,000 tons by 1950, with a total supply of 2,600,000 tons with which to meet it. Of this 2,600,000 tons, 1,525,000 tons will come from wild rubber or cultivated plantations.

"Of course," Dr. Dinsmore stated, "no one can say with certainty when the plantation areas will be recovered. Undoubtedly steps will then be taken for the rapid rehabilitation of the plantations. The reorganization of labor and replacement of equipment on large estates will be a difficult and tedious job. The attitude of natives may be uncooperative and international disputes are not unlikely."

Failure to get sufficient rubber from plantations would wipe out the surplus of rubber. Therefore, it will be necessary to expand our present synthetic rubber production in order to meet the demands of the post-war years and prevent an acute rubber shortage.

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## INVENTION

### Bomb Made From Fruit Jar Resembles Molotov Cocktail

➤ A HAND-FLUNG fire bomb of the "Molotov cocktail" type is the subject of patent 2,351,635, obtained by A. P. Prather and Ralph Russell, both of Georgetown, Ky.

Container for the incendiary fluid is an ordinary screw-top fruit jar. Secured to the cap is a handle, within which a smaller container is positioned so as to discharge a smaller amount of gasoline over a cloth or paper cover when the user is ready to fling his blazing missile. A friction igniter, controlled by a thumb strap, is provided at one side, to set fire to the cover just before throwing.

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## NUTRITION

### Moist, Bland Foods Often Involved in Poisoning

➤ FOODS most likely to be responsible for food-poisoning outbreaks are moist, bland ones, such as cream-filled pastries, spaghetti, macaroni, turkey or chicken stuffing, gravies and creamed dishes of various sorts. Certain types of salads, ham which has undergone a tendering process and, occasionally, corned beef also may give trouble. Germs that cause food poisoning grow well in such foods unless kept at very hot or very cold temperatures.

Foods which are dry, highly acid, highly spiced or with high concentrations of salt are likely to be free from the food-poisoning menace since such foods do not support bacterial growth.

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## ENGINEERING

### New Modern Cargo Winch Reduces Loading Time

➤ A MODERN method of electrical cargo winch control that reduces the time for loading and unloading Victory ships was described by F. H. Holt of the General Electric Company, at the meeting of the American Institute of Electrical Engineers in St. Louis.

The method of cargo handling consists of the use of two cables attached to the load. The first cable is fed over a boom which is swung above the hatch of the ship; the second cable is fed over a second boom above the dock. The load is lifted from the dock by the second cable. As soon as the load is sufficiently far above the dock so that it may be moved over above the hatch, the first cable pulls the load in above the hatch, and lowers it into the bowels of the ship for storage.

Using this method, there is hardly any swinging or jolting of the load, which is very important in the handling of easily damaged or broken cargo.

Either winch to which the cable is attached will hoist a load of 3,000 pounds at a speed of 290 feet a minute. When operating without a load they move at a speed of 400 feet a minute.

Each of the two winches is under the control of its own master switch. A special series of electrical combinations enables the winches to be operated at varying speeds to meet all conditions arising in the handling of light and heavy cargoes.

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