

NUTRITION

**G.I. Joe Will Fight
On New Combat Rations**

► NO MORE hash for G. I. Joe. He will fight on ham and eggs and six other meat items when he gets the new "C" combat rations announced by the War Department.

The meat and vegetable hash has been discontinued and the Quartermaster Corps has expanded the original three meat units in the "C" ration to the following seven: meat and beans; meat and vegetable stew; meat and spaghetti; ham, eggs and potatoes; beef and noodles; meat and rice; and frankfurters and beans.

Variety is the object of the changes and it has been extended to the biscuit-beverage-confection units. A different type of biscuit is now provided for each meal, as well as a different beverage and confection.

One meal in each ration, a ration being three meals for one man for one day, includes one and one-half ounces of jam in a wide variety of flavors.

Science News Letter, May 27, 1944

BACTERIOLOGY

**Germ-Killer in Cabbage
May Have Value**

► THE OLD NOTION that eating raw cabbage is good for what ails you gets some support from studies of a germ-killing substance in cabbage reported by Carl S. Pederson and Paul Fisher, of the New York Agricultural Experiment Station at Geneva, to the New York meeting of the Society of American Bacteriologists.

The substance has a bactericidal action toward gram-negative bacteria, such as the colon bacillus which inhabits the intestinal canal. Eating raw cabbage, therefore, may have "a beneficial effect in controlling the bacterial flora of the alimentary canal," the scientists state.

This cabbage germ-killer also shows some action against staphylococci, common germs in wounds. Apparently not as active against these as penicillin, its effect nevertheless leads the Geneva scientists to comment that the ancient Roman who three centuries before the Christian era advised the use of mashed cabbage in healing wounds may not have been so far wrong.

Of more immediate practical significance is the part this bactericidal substance in cabbage plays in the manufac-

ture of sauerkraut. It is apparently responsible for the disappearance, after the cabbage is shredded for fermentation, of the gram-negative bacteria that are found on the surface of cabbage leaves. The amount or activity of the antibacterial in cabbage juice varies. During certain seasons, off colors, odors and flavors in kraut are quite marked and have caused considerable losses. These objectionable changes may be due to the growth of bacteria which normally would be killed by the substance in cabbage juice.

Many other vegetables do not contain appreciable amounts of this germ-killing substance, which is different from that found in onions.

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INVENTION

**Small Pile-Driver
For Fence-Posts Invented**

► AN INVENTION of potential value in country life is a fence-post driver, on which C. E. Jordan of Dawson, Iowa, and L. L. Jordan of Oskaloosa, Iowa, have received patent 2,348,820. It is built like a small pile-driver, and pounds the posts into the ground instead of necessitating the laborious job of digging postholes and setting and tamping in the posts. The device can be mounted on the rear of a farm truck, and is driven by means of a power take-off from the engine.

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CHEMISTRY

**New Type Fuel Tablet
Perfectured by Army**

► A NEW TYPE of fuel tablet has been developed by the Quartermaster Corps, U. S. Army, in collaboration with the Office of Scientific Research and Development. This fuel tablet will enable the soldier in the field to prepare a quick, hot meal from the "C" or "K" combat rations.

The new tablet is a synthetic compound, known as trioxane, colored to distinguish it as non-edible. It has several advantages over the previously developed square paraffin candle. The new fuel tablet heats faster, is lighter in weight, is more compact and has a less luminous flame. The tablet is flat, weighs a little more than one ounce, and will heat a can of English style stew ("C" ration) in six or seven minutes.

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IN SCIEN

ENGINEERING

**German Designer Perfects
Power Plant For Planes**

► IN THE HANDS of the Alien Property Custodian is patent 2,348,792, granted to the well-known German designer Claude Dornier of Friedrichshaven.

Herr Dornier, who has long been known as a bold, unconventional experimentalist, here undertakes to meet the problems imposed upon aircraft propelling plants by anticipated ultra-high speeds, in the neighborhood of the velocity of sound. Each nacelle, as he visions it, is to have two engines. The forward one will drive a more or less conventional "puller" propeller. The after engine will drive an ultra-high-speed fan or blower, which will pull air in through a series of slots and expel it through a second series of openings immediately to the rear. It appears to be an effort to obtain an effect like that of jet propulsion through mechanical means only.

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ENGINEERING

**Water Injection Device
Speeds up Navy Engines**

► THE RECENTLY-developed water injection device for giving an extra burst of power to airplane engines is credited with having saved the lives of many fighter pilots.

This device recalls the improvised setups once used on aging automobiles, for injecting water into the cylinders on hot, dry days when the engine was rough and lost power.

The device is now being used in conjunction with the Pratt and Whitney 2,000-horsepower engines on Navy fighter planes.

At a flick of a switch, the pilot sends a tiny jet of water squirting into the fuel mixture. This has the same effect on the aircraft motor that injecting water into the cylinders has on the automobile motor. The heated engine runs more smoothly and produces a surge of considerably more power and speed, which is just the margin needed to save the pilot's life.

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CE FIELDS

BOTANY

Wild-Flower Fruiting Stages Are Interesting

See Front Cover

➤ WILD FLOWERS cease to interest most of us after the petals fall. Other flowers, moving up on the season's endless parade of bloom, attract our notice with new beauties, and we pass by the plants that were the center of our attention only a few days ago.

If we would only look casually today where we were fascinated last week we would often see things that would fascinate us still, in the growth and maturing of the wild plants' seed-pods and fruits. The pulpy little May-apples (not ripe until July!), the hair-triggered catapults of the wild touch-me-not, the reddening cluster-fruits of the Jack-in-the-pulpit, all have as great a claim on our interest as did the flowers that preceded them.

Sometimes it is just a matter of sheer elegance of form, as in the slender spire that contains the seeds of the bloodroot, photographed for the cover of this issue of the SCIENCE NEWS LETTER by Staff Photographer Fremont Davis.

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AERONAUTICS

"Flying Jeep" Carries 450 Pounds at 100 M.P.H.

➤ A DIMINUTIVE airplane that can whip around trees and zoom up and dive down like a high speed elevator is acting as the "eyes" of the British Army. It is approximately the "opposite number" of the American "grasshopper" plane.

It is the Auster IV, a new model of the all-steel Auster III which is known as "the maid of all flying work" of the British forces. Mobile as mercury, the Auster IV can take off after a run of 65 yards, can climb more than 1,000 feet in 60 seconds, and has a speed range between 40 and 130 miles an hour. It can cover 250 miles at one hop with a pilot and two passengers at 20 to 25 miles to a gallon of gasoline.

The new plane has a sound-proof cabin allowing normal conversation, controlled cabin heating, a plastic dome and side windows giving an unrestricted

view. Special flaps enable it to land at a very steep angle. It is equipped with foot brakes like an automobile and an inexperienced pilot could land it with the wheels locked.

As a war plane, the Auster IV is chiefly used for reconnaissance and artillery fire control. Frequently flying below tree level, its soldier pilot reports enemy gun positions by radio telephone, so that the range and aim of Allied guns can be constantly adjusted to moving targets.

Austers do not need airports. They operate from parade grounds, plowed fields and short stretches of roadway.

Its wide range of speed, coupled with the maneuverability of a mosquito, makes high-caliber guns and small arms almost useless against it.

Able to carry 450 pounds, it is sometimes used to transport food and medical supplies to outposts where no other plane could land.

The Auster IV costs only \$2,000 and may easily be converted to a post-war "family car of the air" for civilian use. The ordinary man will find it convenient to operate, since it requires only a very small field in which to land, and is simple to control in the sky.

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PSYCHIATRY

Cutting Down Salt in Diet Relieves Sleeplessness

➤ RELIEF from sleeplessness, or insomnia, and nervous tension was obtained in 11 out of 12 patients by cutting down the amount of salt in their diet, Dr. Michael M. Miller, of the U. S. Marine Hospital, Ellis Island, reported to the American Psychiatric Association.

He warned that unrestricted use of a low-salt diet might cause harm and that its use even by physicians in treating patients is still on an experimental basis.

The patients he treated were six hospitalized men suffering from nervous tension and insomnia and six men who had been morphine addicts. The latter showed marked degrees of insomnia, irritability, tension and anxiety states, with considerable mood swing, tending generally toward depression.

"The results were vastly encouraging," Dr. Miller reported.

The studies were carried on with the collaboration of Dr. B. L. Pacella and Dr. Irvile H. Mackinnon of the Psychiatric Institute of New York.

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CHEMISTRY

New Process Makes Bleach Available to Industry

➤ CHLORINE dioxide, a bleach known to be two and one-half times as powerful as chlorine, is now available for industrial use by means of a process developed at the Mathieson Alkali Works and reported by E. R. Woodward at the Cleveland meeting of the American Institute of Chemical Engineers.

Up to the present time, the industrial use of chlorine dioxide has been impracticable because it does not keep. The new process, described by Mr. Woodward, overcomes the difficulty by providing a simple process by which the user can prepare the strong bleach in any quantity right at his plant, from chlorine and sodium chlorite.

Chlorine dioxide has already proved to be of specific value in the food, starch, soap, paper, and textile industries.

Science News Letter, May 27, 1944

CHEMISTRY

Faster Sugar Production Promised by Filter Process

➤ SUGAR to refill that depleted sugar-bowl can be produced more rapidly and with less waste in the process, if the promise of a newly-patented continuous-filter method is fulfilled.

C. J. Peterson of Salt Lake City, recipient of U. S. patent 2,348,846, explains in his preamble the problem which he undertook to solve. Beet or cane juice, he states, is clarified by mixing it with lime, to capture and hold undesirable solid particles. This has to be removed by filtering or settling, or a combination of both.

Filtering through the conventional filter press is a slow job, loses a good deal of sugar in the filter itself, and involves frequent stoppages for changing filters, with attendant high labor costs. Settling before filtering slows down the job still more, and also permits undesirable chemical changes to take place.

His process escapes the dilemma by putting the limed juice immediately through a new kind of filter: a rotating drum that carries the filter, so constructed that part of the filter is constantly being automatically cleansed while the rest is straining the juice. This eliminates stoppages, reduces labor costs, and save a great deal of time.

Rights in the patent are assigned to the Eimco Corporation.

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