

ENGINEERING

Frame Houses Are Good Shelter Against Bomb Miss

► STAY on the first floor instead of taking shelter in the basement of your home in case of bombing, James M. Landis, director of the Office of Civilian Defense, urges. Main reason for the new recommendation is that basement refuge results in too much delay in detecting fires started by incendiaries on the top floors.

Greatest danger to home owners in case of desperate, long distance raids by the Axis will be from incendiaries; fewer of the heavy high explosive bombs will be used because much of the load must be given over to fuel supplies.

Although people living in frame houses must be on the look-out for incendiaries, Director Landis cited recent tests which showed that wood frame houses have remarkable resistance to near misses of 500 pound demolition bombs. In no case did such buildings collapse, even when test bombs were dropped as close as 25 feet.

Best protection on the first floor against bomb fragments, flying glass and plaster is to get under a table or desk where there are few windows, some distance away from a chimney, and preferably where there are many enclosing partitions, such as a hallway.

Science News Letter, July 17, 1943

NUTRITION

Lay in Store of Vitamin A Right Now for Next Winter

► NOW is the time to be storing up vitamin A reserves for next winter. You cannot store up the B vitamins or vitamin C in your body for any length of time, but fortunately vitamin A can be stored in large amounts, particularly in the liver and kidneys. So while you can the surplus beans and peas and tomatoes from your Victory garden, to have a supply of their B and C vitamins for next winter, eat as much as possible of the dark green, leafy and yellow vegetables from the garden this summer. They are the ones that furnish vitamin A. By eating large amounts of them, and all the summer butter you can get, you may store in your body a good amount of vitamin A to help you through next winter.

Vitamin A is essential for growth, so the children in the family must get plenty of it. Babies and very small chil-

dren generally are given extra amounts in the fish liver oil or other preparation which also supplies them with vitamin D to protect against rickets. Grown-ups, however, also need vitamin A. Lack of this vitamin shows up first in the eyes, with the development of night blindness. General health also may be affected by lack of it.

The best food sources of this vitamin are liver, egg yolk, whole milk, cream, butter and oleomargarine enriched with vitamin A. Half of these items are already rationed and many people do not drink much milk or cream or eat many eggs. So it is important to know and eat the vegetable sources of this vitamin.

Color is the guide to vitamin A in vegetables. Look for yellow or dark green. Of the yellow vegetables, carrots and sweet potatoes are good sources. Among the dark green, leafy vegetables, there is a wide choice including broccoli, spinach, turnip greens, kale, beet greens and watercress. Lettuce, especially the bleached, almost white variety, is not a good source of vitamin A.

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INVENTION

Inventor of Plastic Molding Wins John Hyatt Award

► THE JOHN Wesley Hyatt gold medal and a thousand-dollar award were presented in New York to Frank H. Shaw, president of the Shaw Insulator Company, Irvington, N. J., for distinguished achievement in the field of plastics during 1942.

His plastic molding process is widely used in war production. Shell fuses, magneto housings for aircraft, gunstocks and intricate electrical devices for the Army and Navy are now made by the new molding method.

The plastic magneto housings help keep fighter planes operating at high altitudes. When hard rubber was formerly used, ignition systems sometimes went dead because the rubber burned out at high altitudes, short-circuiting the distributor points.

When detonating fuses for mortar shells are molded of plastic, enough aluminum is saved from a million fuses to build 270 fighter planes.

In winning the annual Hyatt award established by the Hercules Powder Company, Mr. Shaw helped to expand the field of plastics started by the inventor of the first plastic, John Wesley Hyatt, for whom the award is named.

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IN SCIEN

MEDICINE

Penicillin Excels Sulfa For Treating Gas Gangrene

► PENICILLIN, the potent germs fighter from mold, is "far superior" to the sulfa drugs in the treatment of gas gangrene, one of the most serious complications of war wounds, Dr. Lucile R. Hac and Dr. Agnes C. Hubert, of the University of Chicago and the Chicago Lying-In Hospital, report (*Proc. of the Society for Experimental Biology and Medicine*, May).

Their report is based on laboratory experiments with mice and guinea pigs infected with *Clostridium welchii*, the germ most frequently found in cases of gas gangrene. A single injection under the skin of 50 Florey units of penicillin given at the time the gas gangrene germs were inoculated into the mice protected 98% of the animals. Repeated small doses gave as good protection as single large doses. Delay in treatment lowers the survival rate, but not appreciably unless the delay is over three hours.

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ENTOMOLOGY

Chilly Spring Winds Caused Decrease in Grasshoppers

► THE ILL WINDS of our chill, rainy spring (remember them?) blew some good to the present summer. The time is now upon us for grasshoppers and chinchbugs to be making big trouble in the great Midwestern grain-raising region — and there are very few grasshoppers and hardly any chinchbugs, according to field reports gathered by the Bureau of Entomology and Plant Quarantine. Rain and cold weather are great discouragers of these two major insect pests.

The grasshoppers took another beating, even before last winter set in, the entomologists report. In mid-autumn last year, just when the females were getting ready to lay their last batch of eggs that would stay in the ground over winter, a premature cold wave and snowstorm, short but sharp, swept over a large part of the grain belt and killed the insects off by billions. So this spring's hatch was rather small to begin with.

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OUR FIELDS

ENTOMOLOGY

P.D.B. Will Blitz Ants Out of Victory Gardens

► IF THERE are ants in your plants, you can rout them with a chemical attack of P.D.B., entomologists of the U. S. Department of Agriculture advise. A really big colony of these persistent insects can do a great deal of mischief, and is not easy to get rid of by ordinary means.

P.D.B., or paradichlorobenzene, to spell it all out, is a crystalline chemical already familiar through its use to repel clothes moths. To use against ants, you simply punch holes a few inches deep in the soil over the nest, pour in a little P.D.B., and fill up with soil again. The crystals will diffuse a gas through the soil that will either kill the ants or make them so miserable that they will make haste to move elsewhere.

Carbon disulfide, a very smelly liquid, is also effective against ants, but is slightly more difficult to use and is decidedly more dangerous to have on the premises because its vapor is somewhat poisonous, and both vapor and liquid are highly inflammable.

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WILDLIFE

Snapping Turtle Acquitted Of Being a Major Menace

► SNAPPING TURTLES, which have long borne the reputation of being the "orneriest" members of the whole shell-backed tribe, are acquitted of at least one charge: that of being a major menace to game fish. Results of a detailed study of their food habits, conducted over a period of three years by Maurice M. Alexander of the University of Connecticut (*Journal of Wildlife Management*, July) do not support the snapper's ill reputation as a destroyer of trout and bass.

There was practical point to Mr. Alexander's investigation. For more than 20 years the state's warden service had been carrying on a trapping campaign every season to reduce the number of these presumed game-fish destroyers. This cost a good deal of labor and money, and it was desired to find out

whether the expenditure was justified.

During the three-year period of the study, 735 snappers were captured in river, lake and swamp habitats. All their stomachs were examined, and all those containing food were put through a biological analysis.

The study showed that the turtles had eaten fish and water plants in about equal quantities. Third item on the list was crayfish, with miscellaneous items like wood duck and muskrat in very low percentages. The fish turned out to be mainly suckers, bullheads, sunfish and perch. The faster and better game fish species did not figure appreciably in the snapping-turtle diet.

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ENGINEERING

Waterproofing Cement Walls Is Subject of Test

► RAIN penetration through masonry structures, particularly concrete walls, is prevented in large measure by the use of cement-water paints. That these paints are highly effective is shown by tests made during the past few years by C. C. Fishburn and D. E. Parsons of the National Bureau of Standards.

The effectiveness of cement-water paints and of other waterproofings for unit-masonry walls was studied by measuring the water-permeability before and after treatment of small wall specimens in conditions simulating actual service.

"Not only were cement-water paints highly resistant to water penetration, but they were more effective than emulsified resin or oil base paints," a report on the tests states. "The cement-water paint coatings were durable and were effective as waterproofing after one or two years of exposure."

On rough-textured concrete block walls, the cement-water paint was found to be most effective when applied with stiff fender-cleaning brushes rather than with soft paint or whitewash brushes. The admixture of fine sand in the first coat applied improved the protection.

The only effective and durable waterproofing treatment for brick walls that did not change the appearance of the walls was repointing or grouting the face joints, it was found.

For inside unexposed walls the investigators found that brush coatings of portland cement and sand were more effective than bituminous coatings, but not as effective as trowel coatings of cement and sand.

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MEDICINE

Substance in Liver Good For Shock Due To Burns

► A SUBSTANCE in liver, and in some commercial liver extracts used for treatment of pernicious anemia, is effective in fighting shock due to burns, Dr. Myron Prinzmetal, Dr. Oscar Hechter, Dr. Clara Margoles and George Feigen, of the Cedars of Lebanon Hospital and the University of Southern California, discovered in experiments with rats (*Journal, American Medical Association*, July 10).

The antishock substance in liver is not the same as the anti-anemia principle. Efforts are now being made to isolate it.

War workers whose jobs require "difficult muscular effort" and who cannot because of local food and eating place conditions obtain adequate diets should be given doses of the vitamin B complex to keep up their strength and work output, it appears from the report of studies at Northwestern University Medical School by Dr. Clifford J. Barboroka, Dr. Eliot E. Foltz and Dr. Andrew C. Ivy who is now on leave serving as scientific director of the Naval Medical Research Institute, Bethesda, Md.

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CHEMISTRY

Carbon Dioxide Fire-Doors Furnish Ample Protection

► THE PECULIAR fire hazards of war industries using highly inflammable substances are partially met by a new method of using liquid carbon dioxide, developed by H. V. Williamson and W. F. Mitcheltree of Chicago. They have assigned rights in their patent, No. 2,322,758, to the Reconstruction Finance Corporation.

One of the worst features about sudden fires in present-day industrial plants is their tendency to burst through doors and archways from the rooms or factory bays where they originate, and spread throughout the plant. The two inventors, in preliminary experiments with straight jets of carbon dioxide, found that they could not throw a curtain of the smothering gas across such an opening quickly enough to check such near-explosive spread.

They were able to set up barriers of carbon dioxide gas and snow, however, when they used curved, scoop-shaped orifices on opposite sides of the openings where protection was needed.

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