

## PUBLIC HEALTH

**Patients Are Turned Away Because of Nurse Shortage**

► **SHORTAGE** of nurses is compelling some hospitals to turn away patients and service standards are going down despite efforts to recruit "women in white." While more and more skilled nurses are being drawn into military service and industry, the number of patients in hospitals is increasing, judging from information based on reports to the U. S. Public Health Service released by the Office of War Information.

Increased war production has jumped industrial accidents to an estimated 2,500,000—more than a third over the 1939 level. Secretary of Labor Frances Perkins states that more than 2,000 workers suffer disabling injuries in manufacturing plants every day. And disease is given new holds by crowded living conditions and relaxed sanitary standards.

To meet growing war needs for nurses America will need 359,000 nurses next year—100,000 more than are now available. Of this number 66,000 would go to the military services, 293,000 to civilian practice.

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## OCEANOGRAPHY

**Messina Strait Subject to High Winds, Tidal Currents**

► **SCYLLA AND CHARYBDIS** made passageway through the Strait of Messina dangerous in the heroic days celebrated in Homer's *Odyssey*. Scylla, once a beautiful maiden, later transformed into a six-headed monster, seized men on passing boats and ate them. She lived on the rock of Scylla on the Italian mainland shore, near the present city of Scylla.

Charybdis was a shapeless monster on the opposite shore near the promontory of Faro, who sucked in huge volumes of sea water and belched it out again, causing whirlpools that devoured the boats. Tidal currents and eddies still exist and must be encountered by Allied forces crossing from Sicily to the mainland. Scylla seems at last to be satisfied, perhaps because of the quantities of beautiful silk and wine produced by her namesake, the city of Scylla.

Because of the mountainous shores on either side of the strait, and the narrowness of the strait itself, it is subject to rather frequent violent winds. Strong tidal currents pass through the

strait every six hours. They produce eddies in several places, particularly off Pezzo north of the city of San Giovanni on the Italian toe, and between it and Scylla.

The strait of Messina connects the Tyrrhenian sea on the north with the Ionian sea on the south. It is approximately 30 miles from north to south, and from two miles wide at the north to some 20 miles where it merges into the Ionian. The least width is off the promontory of Faro. At Messina the strait is three and a half miles wide. Messina's excellent harbor is a circular basin open only on the north.

The narrowness of the Messina strait is probably accountable in part for the severe loss of lives in both Sicily and on the mainland from the well-remembered earthquake in 1908, when over 77,000 died. Italians and Sicilians remember with gratitude the generous help received from America in those terrible days.

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## ENGINEERING

**High-Speed Test Machine Detects Flaws in Wire**

► A **HIGH-SPEED** testing apparatus, that can detect hidden flaws in wires, rods, strips and similar elongate metal shapes as they move through at rates of 40 feet a minute or faster, has just been patented by two Cleveland inventors, D. E. Elmendorf and K. H. Keller. It is calculated to save endless labor involved in visual inspection, as well as to eliminate many failures and rejections due to the unwitting incorporation of defective materials into finished machines, lamps, etc.

The principle involved is simple: it is the well-known fact that the magnetic field surrounding an electric coil is affected by changes in metal objects passed through the hollow center of the coil. In this case, the wire is reeled rapidly through. So long as it is uniform in every respect the field remains steady, but an irregularity or defect, even within the wire, causes a minute "kick" both in the magnetic field and in the flow of the current itself. These current "kicks," suitably amplified by means of a vacuum-tube hookup, signal the operator that something is amiss in the material by winking a neon lamp at him.

Rights in the patent, No. 2,326,344, have been assigned to the General Electric Company.

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**IN SCIEN**

## PHYSICS

**Physicists To Study Atom On High Mount Evans**

► **NEW KNOWLEDGE** of the force that hold together the heart of an atom may result from studies now being conducted at a mountain-top laboratory in Colorado by a group of physicists from the University of Chicago led by Dr. Marcel Schein.

At the high altitude of the cosmic ray station on Mt. Evans the scientists will study the production of mesotrons, the electrical particles in cosmic radiation coming from the upper atmosphere which are probably 150 times as heavy as an electron.

Besides the problems of mesotron formation and distribution, the scientists will continue studies of giant cosmic ray showers. As primary cosmic rays come to earth from outer space they assume changing forms due to the increasing density of the atmosphere nearer the earth. Scientists therefore go to high altitudes where they can study cosmic ray showers, and the mesotrons which produce them, a little closer to their source.

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## NUTRITION

**Vitamin Pills Make Workers More Nutrition Conscious**

► **DESPITE** oft-repeated claims that vitamins given to workers as an everyday nutrition aid cause reliance on pills instead of proper food, practical experience suggests that just the reverse is true, maintains Dr. K. Hickman, director of research for Distillation Products, Inc. (*See SNL*, July 31)

His firm has distributed a poly-vitamin supplement daily to its workers producing a good effect on morale and arousing an interest in the science of nutrition among those who were previously careless and ignorant of the nutritive value of food.

"We find," Dr. Hickman declared, "that persons who have never given a thought to the nutrition value of their diet become nutrition conscious when taking vitamin pills."

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# CE FIELDS

## AERONAUTICS

### New Tailless Airplane Has Miniature Fuselages

A NEW EFFORT to solve the problem of the tailless airplane is represented in the design submitted by Donovan R. Berlin of Eggertsville, N. Y., for patent No. 2,326,819, which he has assigned to the Curtiss-Wright Corporation.

The craft is of the pusher type, with counter-rotating propellers mounted coaxially at the stern of its streamlined and abbreviated fuselage, just clearing the rear edge of the wing. Trailing backward from each wing-tip is what the inventor describes as a streamlined boom, bearing the controls. It looks like a miniature fuselage with much exaggerated rudder and horizontal stabilizers.

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## HOME ECONOMICS

### Salt or Brine Vegetables If Pressure Cooker Lacking

► IF YOU cannot get a pressure cooker, salt or brine non-acid vegetables, instead of taking chances on unsafe and uncertain canning methods, the U. S. Department of Agriculture advises. One of the department's chemists, John L. Etchells, and Ivan D. Jones, of the South Carolina Experiment Station, have devised improved methods for salting and brining.

Snap beans, carrots, cauliflower, many greens, green tomatoes, cabbage and even head lettuce may be preserved this way. Salt may also be used to preserve corn, peas, lima beans, okra, green peppers and onions, but these vegetables need heavy salt or strong brine.

In brining snap beans, one of the best for this method of preserving, give them a preliminary five minutes in steam or boiling water to help hold their color and hasten fermentation. Prepare other vegetables as for cooking. Then cover the vegetables in the crock with brine made of a half pound of pure granulated salt and a cup of vinegar in a gallon of water, or sprinkle dry salt between layers of the vegetables, using a half pound of salt and a cup of vinegar for each 10 pounds of the

vegetable to be put up in this way.

Lay several layers of cheesecloth over the vegetables and tuck down inside the crock, then cover with a plate, and weight down with a brick or stone. The brine should come up over the plate. Remove the white scum as it forms on the surface of the brine by lifting up the stone, plate and cheesecloth, washing thoroughly, and replacing. After about two weeks the bubbling will stop. The vegetables will then be ready to pack in glass jars and process in a boiling water bath—25 minutes for pints and 30 minutes for quarts.

Vegetables brined this way require little or no soaking before cooking or serving. Rinse them in clear water, boil at least 10 minutes and serve. They have a pickled flavor, much like cooked vegetables seasoned with salt and vinegar.

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## PSYCHOLOGY-PHYSIOLOGY

### Noise in Gliders Due to Air Turbulence

► CONTRARY to popular notion, the inside of a glider is a very noisy place, even though glider planes have no engines and no propellers. Conversation is difficult if not impossible when the glider is moving at about 150 miles an hour.

Air turbulence is the reason, Comdr. Leon D. Carson, U. S. Navy, Dr. Walter R. Miles, Yale University School of Medicine, and Dr. S. S. Stevens, Harvard University, report to the Federation of American Societies for Experimental Biology.

In an airplane, part of the noise is due to the "thunderous" agitation of the air by the propeller. Bad enough when a thousand horsepower is fed into the propeller, this din is actually more than doubled when the engine delivers 2,000 horsepower, because "as the tip speed of the propeller increases, a larger proportion of its driving energy is converted into sound."

Higher horsepower, however, also means more speed and hence more turbulence about the ship. The turbulence of the slip stream over the wings and about the fuselage is what produces the "distressing, high frequency random noises which sound like a mighty 'shhhh,'" the scientists explain.

The noise from this air blustering about the plane is more of a problem in some respects than the noise from the propeller itself, and is what makes the inside of a glider so very noisy.

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## PUBLIC HEALTH

### Diet Hints Are Given For Regular Blood Donors

► THOSE who are giving blood regularly to the American Red Cross for our fighting men should eat foods that supply plenty of iron, copper and high grade proteins, so that they will quickly build up more blood for themselves and the blood and plasma banks. Under food rationing, this takes a little planning. To help you with this, the American Dietetic Association has published recommendations and a sample menu.

Immediately after giving a blood donation, they advise one or two cups of hot cocoa for nourishment and stimulation. If cocoa is not available, take hot milk flavored as you wish.

Every day eat about four ounces of meat, poultry, fish or soybeans. Include liver or kidney two or more times a week. One-half cup of cooked soybeans is equivalent to about two ounces of edible meat.

One or more eggs should be eaten daily. One-quarter cup cooked soybeans is the equivalent of one egg.

Take one pint of milk or more daily. One ounce of American cheese is about equal to one seven-ounce glass of milk except that it has considerably less of two of the B vitamins, thiamin and riboflavin.

Two or more servings per week of soybeans, dried peas, beans, lentils or peanut butter are advised.

Two or more servings of fruit should be eaten daily. This should include one large serving of citrus fruit or tomato, fresh or canned. Apricots, peaches and prunes are good choices for the second fruit, when you can get them, because of their blood building qualities.

Two or more servings of vegetables daily, one of them leafy green or yellow, should be eaten in addition to one or more daily servings of white or sweet potatoes.

Whole grain or enriched cereals and whole grain or enriched bread should be used daily. Fats and sweets may be added to, but not substituted for, the above foods. Too much sugar or fat will destroy the appetite for the other foods and may cause an undesirable weight gain. Remember that molasses, sorghum and maple syrup are good sources of iron as well as being good sweeteners for food. Corn syrup and brown sugar also contain some iron.

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