

normal blood pressure in middle and old age, however, does not conflict with the fact that persons with lower blood pressures have a better chance to live longer.

Limits of normal blood pressure at ages over 40 should be raised, the scientists state, adding that they are now working on the development of new standards.

Science News Letter, April 24, 1943

CHEMISTRY

Food Research Reported

Nutritional values of meat proteins for troops and lend-lease shipments are found to be preserved in processing.

➤ MEAT for our armed forces overseas and for lend-lease shipment to our fighting allies keeps its nutritional value under the processing methods used, a three-man research team in Swift and Company's laboratories learned by test feedings to white rats. They experimented with the proteins of beef and pork as processed in four different ways: dehydration, canning, roasting and frying. In all cases, the results indicated "that from a practical standpoint there was no significant decrease in the nutritive quality of the proteins."

This report was presented to the American Chemical Society in Detroit by Dr. C. E. Poling, Dr. H. W. Schultz and Dr. H. E. Robinson.

Science News Letter, April 24, 1943

Processed Milk Valuable

➤ PROCESSING milk leaves its proteins unimpaired in nutritional value, Prof. Carrell H. Whitnah of Kansas Agricultural Experiment Station told the Society. The milk samples used in tests on that most accommodating of animals, the laboratory rat, were evaporated, canned and sterilized. Some of them were also irradiated to produce either 270, 540, or 800 units of vitamin D per quart. In all tests, the variously treated samples of milk were found to be "without loss of protein quality as measured by digestibility or biological value."

Other tests showed no difference in digestibility or biological value in samples of evaporated milk at various periods from two weeks to 14 months after preparation; in other samples protected against spoilage with various preservatives, and in still others selected at various stages in the cow's lactation period.

Science News Letter, April 24, 1943

Sulfa Affects Nutrition

➤ UNFAVORABLE effects of some of the sulfa drugs on the nutrition of patients receiving them was reported by Dr. Gustav J. Martin of the Warner Institute, New York. At least part of these drawbacks to the use of the "miracle drugs" are due to action of the sulfa compounds in discouraging the growth of the bacteria in the digestive tract, which appear in some way to aid the formation of certain vitamins.

One vitamin in particular, the hemorrhage-stopping K, is dangerously diminished by sulfa treatment, so that the patient is apt to bleed troublesomely from minor wounds. This condition can be corrected by adding vitamin K to the diet. It appears also that vitamin C acts as an "encourager" to vitamin K, so that the addition of C to the sulfatreated patient's diet is helpful as well.

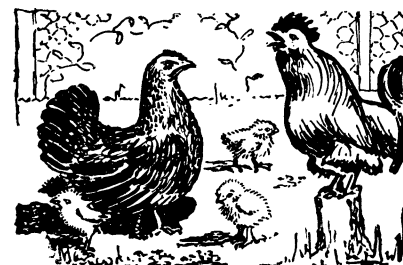
Science News Letter, April 24, 1943

Test Loss of Thiamin

➤ EFFECTS of various steps in the canning process on the thiamin (vitamin B₁) content of several vegetables were reported before the meeting by Dr. L. E. Clifcorn and Dr. D. G. Heberlin, of the Continental Can Company.

The preliminary process of blanching, that is, brief scalding of the vegetables with steam or hot water, seems to have variable effects. Even size has something to do with it; large green peas lost less thiamin upon blanching than did little ones. Asparagus showed no loss of the vitamin after blanching in hot water at 170 degrees Fahrenheit for 90 seconds. After blanching, whole green beans were found to have retained 94% of their original thiamin content, but their retention in cut beans was only 84%.

Science News Letter, April 24, 1943



Mixed Symbols

➤ EASTER EGGS, gaily dyed and decorated, have come to be taken pretty much for granted as just something we do at Easter time, just as candles are an accepted part of the Christmas celebration. Most of us have forgotten the symbolism once taught us at Sunday School: that the egg, capable of producing a living chick when its seemingly lifeless shell was cracked, is a sign and token of "resurrection, and life everlasting," breaking the seal of the sepulcher.

Presence of a rooster, somewhere in the background, fitted well enough into the Easter picture: was it not one of these trumpet-voiced birds that chided Peter for his weak-kneed denial, and put into his spine the stiffening of repentance?

All this is wholly orthodox and proper Christian symbolism; but there are elements mixed in with it that represent survivals of remoter, more nearly forgotten pagan observances. Giving gifts of eggs at all is a pre-Christian custom: the old spring festivals were seed-time rites, and anything suggesting sprouting and fertility was proper to the occasion. Eggs and chickens, rabbits and their young, wreaths of flowers for the hair, all belong to these dimly remembered ceremonials of the childhood of our race.

It is, perhaps, not too violent a stretch of the imagination to suggest that even our most sophisticated Easter bonnets are such survivals. All the ladies have done is interpose a bit of straw or felt between their hair and the flowers, and substitute non-wilting artificial blooms for the perishable gleanings from spring-time meadows and woodlands. Confirmation of this theory of the paganness

of spring millinery can be obtained from at least the straiter-laced members of the clergy.

One very odd pagan note might be added. It comes from a part of Europe saturated in Christian history from very early times: Westphalia, where the intensely Catholic population still flock to Mass on Sundays and holy days, despite Hitler, Himmler and the Devil himself. There, in the traditional home of fine smoked pork products, the farmer folk cook the first of their winter's curing of hams for Easter dinner, and they call the day *Schinkenonntag*, which Englishes as "ham Sunday." What can this be but a far-off echo of the pre-Christian cult of ancient Germany, which saw in the prolific pig a symbol of fertility, abundance and good luck generally?

Science News Letter, April 24, 1943

PHYSIOLOGY

Female Rats Age When Deprived of Tryptophane

► FEMALE RATS grow old before their time, failing to produce young even though recently mated, if they do not receive in their diet one of the essential fractions of protein known as tryptophane, one of the amino acids. Experiments indicating this are reported by three Johns Hopkins University physiologists, Dr. Anthony A. Albanese, Dr. Romaine McI. Randall and Dr. L. Emmett Holt, Jr. (*Science*, April 2).

Earlier researches by other scientists had already shown tryptophane lack to be an aging factor in male rats, causing loss of hair, defective teeth, degeneration of eyes and reproductive failure.

The three Johns Hopkins investigators first mated a group of mature, vigorous female rats. Then they placed part of them on a diet lacking in tryptophane, keeping the rest on a normal diet as controls. The control animals all bore normal litters, while the others, after developing symptoms similar to those seen in similarly treated male rats, all failed to have any young.

They point out a possible practical application of their research, in the livestock industry. Poor reproductive capacity has often been noted in animals on low-protein diets. The Johns Hopkins physiologists raise the question whether the lack of tryptophane is not the actual difficulty in such situations.

Science News Letter, April 24, 1943

Almost any organic matter can be used to produce industrial alcohol.

• New Machines and Gadgets •

⊗ **GRINDING** high-speed lathe cutting tools is expedited by use of a specially designed fixture holding 18 tools at a time. Precision grinding results and tool life efficiency is increased.

Science News Letter, April 24, 1943

⊗ **A RUBBER LUNG** has been devised to insure successful and safe artificial respiration. Strapped to the back or stomach of a shock or drowning victim, the apparatus is said to activate muscles which gently draw air in and out of the lungs until natural breathing is restored.

Science News Letter, April 24, 1943

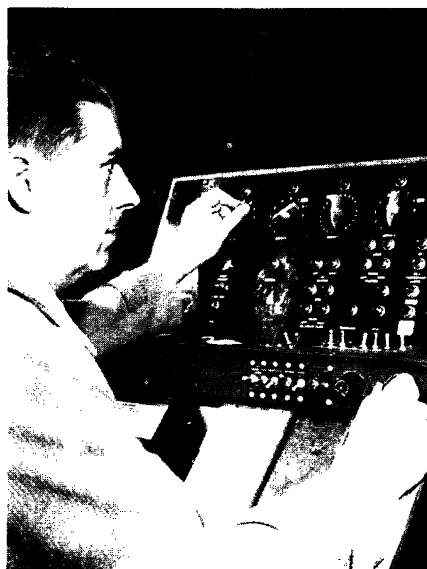
⊗ **A NEW PENETRATING** liquid sloshed on cement floors is said to make them dustproof and crumbleproof. Applied to surfaces that are to be painted, it will also keep moisture from entering the material.

Science News Letter, April 24, 1943

⊗ **PLASTIC COVERSLIPS** are now used to cover specimens for examination under the microscope. They replace the extremely thin handcut glass formerly imported from Japan and Czechoslovakia. Besides having all the desirable properties of the fragile glass, the plastic is unbreakable and only about one-fourth as expensive.

Science News Letter, April 24, 1943

⊗ **TIME REQUIRED** to check the maze of electrical installations in warplanes is cut from about 18 hours to 15 minutes by a recent invention. It checks hundreds of wires for proper wiring and



shorts, indicating which ones are bad and where. Operating principle of the tester is based on the fact that the main switch box is the heart of a plane's circuit.

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⊗ **RIVET SORTING** machines save much time formerly consumed by hand sorting. In a big aircraft factory many pounds of rivets are dropped each day which are gathered up in the sweepings and salvaged. The sorting machine is a battery of four revolving cylinders with different size perforations which sorts them by sizes. They are then separated by head types and finally by their lengths.

Science News Letter, April 24, 1943

⊗ **HEALTH BOMB** is a new metal dispenser which holds one pound of insecticide spray under compression. The spray is released by pressure on a trigger. A single 6-inch dispenser can fumigate 150,000 cubic feet of space.

Science News Letter, April 24, 1943

⊗ **A RESIN** and oil emulsion paint, especially designed for use over wall-paper, seems to provide all the advantages of flat oil finishes. It is mixed with half its volume of water and applied with a brush, drying in about an hour. It is washable after 20 to 30 days when the oil-resin film in the emulsion has oxidized.

Science News Letter, April 24, 1943

If you want more information on the new things described here, send a three-cent stamp to SCIENCE NEWS LETTER, 1719 N St., N. W., Washington, D. C., and ask for Gadget Bulletin 153.

British engineers are reported to be using waste paper to make expansion joints for the concrete runways on airfields.

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