NUTRITION

Wheat Germ Could Substitute For Cheese or Beefsteak

Experiments on Rats Indicate That Wheat Germ Protein Is as Good for Maintaining Growth as Is Casein

WHEAT germ may become the war diet substitute for cheese, beefsteak and the Sunday roast, it appears from experiments reported by E. L. Love and C. G. Harrel, of the Pillsbury Research Laboratory, Minneapolis, at the meeting of the American Association of Cereal Chemists in Chicago.

Wheat germ protein, they found in diet experiments with laboratory rats, is as good as or better than casein, chief protein of milk and cheese, for maintaining growth. They conclude that it "can be used in the human dietary as a supplementary protein equal in value to casein or other animal proteins."

Animal proteins, from meat, fish, poultry, milk or cheese, have heretofore been considered better for human nourishment than proteins from plant sources such as vegetables and grains. But, as the Pillsbury researchers point out, the "impending shortage of animal proteins" throughout the world due to the war makes the finding of an adequate protein from other sources particularly important.

The wheat germ protein, however, cannot be obtained from ordinary bread, because this part of the wheat is discarded when flour is bolted. Bread made from unbolted, stone or water ground flour would contain the wheat germ and its protein. The germ of the wheat is discarded in flour milling because it also contains an oil which rapidly turns rancid.

Science News Letter, May 30, 1942

Enrichment at 20 Cents

IMPROVED nutrition for the "uninformed and the unprogressive as well as to others at the trivial cost of 20 cents per capita per year" can automatically be attained through enrichment of bread and flour with the two vitamins, thiamin and niacin, and the mineral, iron, Dr. R. R. Williams, Bell Telephone Laboratory researcher famed for discovering a way to produce thiamin synthetically, declared.

Thiamin is vitamin B_1, also known as the morale vitamin. Niacin is the new name scientists have given to the pellagra-preventing vitamin.

Something more than a third and less than a half of the nation's bread and flour supply is now being enriched, thanks to the cooperation of the milling and baking industries, Dr. Williams stated. He listed obstacles to further advance as follows:

"1. The highly competitive situation in low priced flours such as are used by low-income people has so far made such flours unavailable in enriched form. This is a definite challenge to the flour industry.

"2. The public appreciation of the values of enrichment is still slight so that bakers find it difficult to recoup the costs of bread enrichment. This is a challenge to the nutritionists of the country.

"3. Delay in the promulgation of final regulations for the enriched products retards progress."

Science News Letter, May 30, 1942

MEDICINE

Sound Waves Are Used To Improve Sulfa Drug

USE of sound waves to improve sulfa drug treatment of wounds, infections and burns is announced by Dr. Leslie A. Chambers, Dr. T. N. Harris, Dr. Francis Schumann and Dr. L. Kraeer Ferguson, of Philadelphia (*Journal, American Medical Association,* May 23).

The sonic vibration is used to break up sulfathiazole crystals into microscopic bits which when suspended in water or salt solution gives a preparation with the consistency of thick cream. This preparation can be injected through fine gauge hypodermic needles, which is usually not possible with neutral suspensions of ordinary sulfa drug crystals because

PIONEER

This painting by Dean Cornwell, depicting "The Dawn of Abdominal Surgery," and portraying one of the earliest abdominal operations, performed by Dr. Ephraim McDowell, of Danville, Ky., in 1809, will be unveiled before the American Medical Association on June 8. It is fourth in a series on "Pioneers of American Medicine." Others honor William Beaumont, Sir William Osler, and Drs. Walter Reed and Carlos Finlay.

of their larger size and irregular shape.

The microcrystals of sulfathiazole can get to work faster at their job of stopping germ invasion because they dissolve more rapidly and do not clump or cake.

Favorable results with the use of these microcrystals are reported in 30 wounds resulting from injury, 57 infections such as abscesses and carbuncles, in burns and in 19 patients who had abdominal operations that might have been complicated by peritonitis.

Science News Letter, May 30, 1942

Cures 'Flu Meningitis

FIVE children under four years of age suffering from usually fatal influenzal meningitis were promptly and dramatically cured by sulfadiazine treatment, Dr. Wallace Sako, Dr. Chester A. Stewart and Dr. Joel Fleet, of New Orleans, report in the same issue of the *Journal* of the A.M.A.

Two others getting the treatment died, one apparently as a result of stopping the treatment too soon and the subsequent development of chickenpox, and the other because of cisternal puncture to remove spinal fluid.

Science News Letter, May 30, 1942

AGRICULTURE

Hemp Being Grown in U. S. As War Cuts Off Imports

See Front Cover

WHEN they hang Adolf Hitler on a sour-apple tree, there'll be a good rope of American-grown hemp ready for the job. After a lapse of a couple of generations, hemp is again being cultivated in the United States, to make good the cutting off of our Asiatic import sources for cordage. You can't run a Navy, not even a modern steel-and-steam Navy, without hemp rope. The Army needs a lot, too, and war-essential industries also have their hemp demands.

The U. S. Department of Agriculture has bought and distributed about 3,000 bushels of hemp seed, enough to plant some 350,000 acres. Most of the planting will be done in Kentucky, where hemp cultivation started in 1775 and has survived on a small scale ever since. Hemp will also be grown in Wisconsin, Minnesota and Illinois. The acreage may be expanded into other states in 1943.

While the hemp seed was in the warehouses it was guarded by soldiers. Hemp is the source of very troublesome narcotic drugs.

Science News Letter, May 30, 1942

PHYSICS

Liquid Flow Through Pipe Assumes Five Different Forms

Three Kinds Previously Observed Declared Not Enough; Other Types Occur When Velocity Is Very Low or High

THE FLOW of oil, gasoline and other liquids through a pipe assumes five different forms as the velocity is increased, instead of only three as generally supposed, according to a communication to the British journal *Nature* from Alfred H. Nissan, Department of Oil Engineering and Refining of Birmingham University.

The three kinds of flow previously observed are the smooth, the critical and the turbulent. These are assumed in succession as the velocity of flow is increased. For smooth flow the frictional loss is low; for turbulent flow it is high. In the short critical range between, the loss changes rapidly from a low to a high rate of increase with velocity. The flow here is partly smooth, partly turbulent.

These three stages can be illustrated by water flowing from a tap, by turning the tap on gradually.

Mr. Nissan, however, declares this classification to be an over-simplification. He finds two other distinct types which might be called the sub-smooth and the super-turbulent.

When the velocity is very low, the frictional loss increases with the velocity at a lower rate than for smooth flow. This sub-smooth type occurs when oil, gas or water seeps through porous layers in the earth.

When the velocity is very high, certain sound waves are produced which further increase losses and make a fourth type.

The usual methods of calculating flow fail in these cases, he says. They give results too low or too high, which may sometimes be a serious error.

Science News Letter, May 30, 1942

CRUSHING THE STRAW

After the hemp straw comes from the drier, it is fed into a hemp break which thoroughly crushes it. Then the hemp is cleaned by beating and brushing in a hemp scutcher. This process, which removes the woody, pithy portion, called hurds and sends the fiber out clean, is shown in the picture on the front cover of this week's SCIENCE NEWS LETTER. Both photographs are official pictures of the U. S. Department of Agriculture by Forsythe.