

NUTRITION

Taking Vitamins in Wine Now Seen as Possibility

► SCIENCE is making it easier all the time for you to take your vitamins—soon they may come in wine!

Fortification of wine with B vitamins has proved successful in experiments by Dr. Agnes Fay Morgan, professor of home economics at the University of California.

Dr. Morgan does not recommend that other methods of taking vitamins be abandoned, but she does suggest that fortified wines may be useful as vitamin carriers for medicinal purposes.

The main purpose of Dr. Morgan's research, however, was to counteract the consumption of calories from alcohol, which burns up the body's store of B vitamins.

Chronic wine drinkers, as a result of this burning up of B vitamins, contract an acute alcoholism which is often characterized by dermatitis, mental confusion and the digestive disorders of pellagra. The fortification of wines with B vitamins may help prevent these symptoms.

Vitamins remained stable over a period of four years in the California wines fortified by Dr. Morgan. The experiments were done by Dr. Morgan with the assistance of the California Wine Institute.

Science News Letter, December 15, 1945

PUBLIC HEALTH

Including Health In Reconversion Plans

► IF WE INCLUDE health in our reconversion plans, we have a good chance of raising the state of health throughout the nation to "unprecedentedly high levels." We can increase the average length of life from the present 65 years to 70 years by applying widely the knowledge now available to us, statisticians of the Metropolitan Life Insurance Company point out.

From figures showing the diseases and conditions which take the greatest toll of life, one can learn where the greatest effort must be made, both nationally and by each person anxious to improve his own health.

Leading cause of death for both men and women in the white population of the country in 1942 was chronic diseases of the heart. (The 1942 figures are the latest available for the whole population

and are believed to give a fairly accurate picture of the situation today.)

Next cause of death for women was cancer. Among men disease of the heart's arteries and angina pectoris had a slight edge over cancer as a cause of death.

Ranking high as a cause of death were accidents. They "overshadow by a wide margin every other cause of death throughout the greater part of life among white males," the insurance company statisticians point out.

"In the broad age range 1 to 44 years, accidents constitute almost one third of the deaths from all causes among these men; in the decade of life from 15 to 24 years, the proportion is as much as one half.

"Even among girls and young women the loss of life from accidents is large. They account for one fifth of all the deaths among white girls at ages 1 to 4, and for fully one fourth at 5 to 9 years."

Science News Letter, December 15, 1945

MEDICINE-ENGINEERING

High Speed X-Ray Unit Available for Medicine

► A VERY high speed X-ray unit, the millionth-of-a-second Micronex, was the outstanding feature of a two-day demonstration of X-ray equipment now available for peacetime medicine and industry held in Baltimore by Westinghouse Electric Corporation.

Micronex is a unit perfected under war pressure for use in making detailed studies of the protective characteristics of armor plate, the behavior of armor-piercing shells, and similar matters. Operating on the surge generator principle, the unit builds up great reserves of power which are loosed in one instantaneous burst to activate a special tube which generates X-rays capable of penetrating one inch of solid steel in one millionth of a second.

The Micronex will have important uses in future industries, it is predicted. These include studies of cutting tools operating at high speeds, shaft action within a bearing, life and behavior of cutting oils and many others.

Among the units for medical purposes, another X-ray device, called the Monoflex, is probably the most important. It is a deluxe single-tube diagnostic equipment. Also, there is the so-called PFX, a high-speed miniature film unit for chest surveys in combating tuberculosis.

Science News Letter, December 15, 1945

IN SCIEN

PLANT PATHOLOGY

New Fungus Disease Attacks Cinchona Tree

► DISCOVERY of a hitherto unknown fungus disease of the cinchona tree, which has been named cinchona scab, is one of the results of the wartime search made by botanists from the United States for new sources of quinine in South America. It has been identified and is given its first scientific description by Dr. Anna E. Jenkins, mycologist of the U. S. Department of Agriculture (*Journal, Washington Academy of Sciences*, Nov. 15).

The fungus attacks all green parts of the cinchona, making brown spots on leaves and young branches, and causing deformities in the immature seed capsules. It is impossible to judge at present whether the disease does enough harm to be economically important, but it is widespread and has been found on three different species of cinchona trees.

The fungus has been identified as a member of the genus *Elsinoe*, which contains many species that attack higher plants. It is distinct from all previously known species, however, so that Dr. Jenkins has described it as a new species, giving it the botanical name of *Elsinoe cinchonae*.

Science News Letter, December 15, 1945

GENERAL SCIENCE

Scientists Urge Aid For Axis Victims

► FAMILIES of scientists in Europe, victims of the Axis, are being sent gift packages of food and clothing by a group of wives of American scientists.

The group, made up of wives of scientists at the National Bureau of Standards in Washington, urges any American scientists or individuals interested in augmenting their important work to write to Mrs. E. R. Smith, secretary, at the Bureau for names of needy persons.

Many children as well as adults may be greatly aided during the severe winter expected this year in Europe if help is received promptly. It is suggested that all inquiries state the size of clothing that can be supplied and the countries to which the packages should be sent.

Science News Letter, December 15, 1945

CE FIELDS

NUTRITION

Speed of "Quick" Freezing Affects Quality Little

➤ **VEGETABLES** don't really need the ultra-fast freezing stressed by commercial producers, food chemists of the New York State Agricultural Experiment Station at Geneva and the Cornell University School of Nutrition declare, after extensive comparative tests. Texture, color and flavor are little affected by the rate of freezing, they state.

In tests on peas and snap beans, nearly instantaneous freezing was achieved by immersing the vegetables in liquid air. Intermediate rates of freezing were also tested by varying the temperature of the cold room in which the freezing was done.

Vitamin determinations on the frozen beans and peas before and after cooking showed little differences for the different rates of freezing. Several experienced food judges were unable to detect differences in taste and color among lots frozen at different rates.

Science News Letter, December 15, 1945

ENGINEERING

Compression Distillation For Peacetime Industry

➤ **COMPRESSION** distillation, a new technique originally developed during the war for getting fresh water out of sea water, promises to become useful in peacetime industry because of its great simplicity and low cost of operation, Allen Latham, Jr., engineer on the staff of Arthur D. Little, Inc., told colleagues at the meeting of the American Society of Mechanical Engineers in New York.

Compression distillation differs from the conventional type of distillation in use for centuries in the way it obtains the heat necessary for evaporating the liquid to be distilled. In the older method, heat was applied continuously to the liquid, and the steam or vapor thus driven off was condensed to liquid again.

In compression distillation, the direct heating-up is only a preliminary step. As soon as a small amount of steam is available it is mechanically raised to a higher pressure. This does two things: raises its temperature as steam, also raises

the temperature at which it condenses to water.

This temperature rise of course means that heat is given off, and this heat is used to evaporate more of the water in the still. As long as the pressure is kept up this process is continuous. Fuel or electric power is therefore used to drive the compressor instead of boiling the water in the still.

The compression distillation method described by Mr. Latham was developed by a group of engineers headed by Commodore Robert V. Kleinschmidt for use by the Navy. It was extraordinarily efficient, consuming only one-fifteenth as much fuel for a given quantity of water distilled as was required by the conventional methods. Water produced by the Kleinschmidt stills played an important part in American victories on some of the desolate Pacific islands, especially Iwo, where our forces had plenty of water when the enemy had got into desperate straits from its lack.

Civilian applications of the compression distillation method are being worked out in the Little laboratories, where Commodore Kleinschmidt has now returned to his prewar status as Dr. Kleinschmidt.

Science News Letter, December 15, 1945

BIOCHEMISTRY

Blood Fractionation Process Patented

➤ A **NEWLY ISSUED** patent of unusual scientific interest is No. 2,390,074, taken out by Prof. Edwin J. Cohn, Harvard University biochemist. It covers the process he has developed for the separation of blood plasma into its constituent fractions: fibrinogen, globulin, albumin, etc., each of which was demonstrated by wartime medical experience to have its own special therapeutic value.

Separation of these compounds from the mixed solution that is plasma depends on extremely accurate adjustments of their respective acid-alkali balance, the electric charges carried by their molecules, the temperature, and finally the organic precipitating agents (alcohol, acetone, dioxane) used to bring them out of solution. Modifications of the process can be used in getting other proteins out of mixed solutions.

Rights in the patent are assigned to the Research Corporation of New York, a non-profit institution which devotes all proceeds from patents which it holds to the promotion of scientific research.

Science News Letter, December 15, 1945

MINERALOGY

Beautiful New Gem Stone Found in South America

➤ **BRAZILIANITE**, a new yellowish-green gem stone of unique chemical and crystallographic properties, has just been given its first scientific description by two mineralogists, Edward P. Henderson of the Smithsonian Institution and Dr. Frederick H. Pough of the American Museum of Natural History.

The stone was first obtained by Dr. Pough in Brazil from the owner, who thought it was chrysoberyl. However, examination proved it to be different both in structure and in chemical makeup. Chemically, brazilianite is a hydrous sodium-aluminum phosphate. Its principal drawback is its lack of hardness. That, plus its scarcity, may prevent it from becoming popular as a gem stone.

Brazilianite is the first new mineral with gem-stone possibilities to be discovered since 1909, when the mineral benitoite was found in California.

Science News Letter, December 15, 1945

AERONAUTICS

Details Revealed of Most Powerful Airplane Engine

➤ **DETAILS** relative to the most powerful aircraft engine developed and in production anywhere in the world have been released. It is the 28-cylinder, 3650 combat horsepower, Pratt & Whitney Wasp Major, designed particularly for big long-range airplanes. With the war over, production is continuing because it will be the power plant in many giant new airliners.

The 28 cylinders of the Wasp Major are arranged in four rows of seven cylinders each, giving the engine a frontal area no greater than that of the 18 cylinder engine put out by the same company. The new engine is only one inch larger in diameter than the original 410 horsepower Wasp, built in 1925. Excellent cooling characteristics result from a helical arrangement of the cylinders about the crankcase.

The giant engine has deep-finned, forged aluminum cylinder heads and duralumin cylinder muffs of special design; scientifically correct cylinder cooling baffles; the elimination of the conventional ignition harness through the use of seven interchangeable magnetos; and an improved automatically-controlled, hydraulically-driven, variable speed supercharger.

Science News Letter, December 15, 1945