

Penicillium notatum), which can be obtained from any reputable bacteriologist or medical school, and transferred to the plate by stroking the loop across the medium several times. The dish is then turned one-fourth of a circle and the plate stroked again with another loopful of culture.

"The cultured dishes are then placed in a safe place at room temperature. Optimum temperature for the growth of the mold is 72 to 74 degrees Fahrenheit.

"The first growth of the mold is evidenced in 24 hours by the appearance of numerous 'snail tracks' on the surface of the medium. Soon the entire surface becomes pure white with mycelial growth. In several hours the growth changes in color into a light dusty green which soon deepens into a dark green and finally, if allowed to grow long enough, becomes almost black.

Globules Appear

"At about the age of five days, small yellow-hued globules appear on the surface of the mold. This is pure crude penicillin and has an inhibitory titre to staphylococci in dilution of one to 20,000.

"The penicillin which is secreted during the growth processes of the mold is mainly deposited on the under surface of the gauze and is of an unmistakable deep yellow color. The formation of penicillin reaches its maximum in 12 days, then rapidly retrogresses during the next two days. Hence the penicillin gauze is used when it is from four to 12 days old, the lower figure being the earliest age at which sufficient penicillin has been secreted to be effective.

"In use, a section sufficiently large to cover the infected area is cut from the penicillin gauze with sterile scissors and applied yellow side next to the wound. This is then covered with a single thickness of 28 x 24 gauze cut slightly larger than the patch and bound down securely along the edges with adhesive."

Periodic preparation of the penicillin gauze is necessary in order to have it on hand at the proper stage of mold growth when it is needed, Dr. Vogel points out. He also warns that the penicillin is in the crude state and present in such small quantity that it cannot be refined and used intravenously for a septicemia or pneumonia or for any infection that is not in or near the surface of the skin.

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Modern *ball-bearings*, probably, most nearly approach the perfect sphere; they are usually made to tolerances of 1/100,000 inch.

Books of the Week

► CHEMISTRY has been popularized over and over since Slosson's resoundingly successful pioneer work, *Creative Chemistry*. THE CHEMICAL FRONT, by Williams Haynes, has the freshness of a new approach: it looks at the manifold role of chemistry in war, and in the world that is to follow the war, ranging through such diverse subjects as explosives and poison gases, sulfa drugs and atabrine, synthetics and light metals. The color-photo illustrations are striking. (*Knopf, \$3*)

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► HISTORICAL BOTANY, presented in a delightfully fresh and discursive style, with pictures to match, constitutes the matter of FIRST THE FLOWER, THEN THE FRUIT, by Jannette May Lucas. (*Lippincott, \$2*) Since all the plants discussed are pleasant to the tongue or the nose or the eye (or all three), interest in this book is decidedly not limited to botanists.

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► ALASKA has been brought nearer to the rest of the United States by recent events; we have become more interested in the land and its inhabitants. One of the most interesting of these, the Alaska brown bear, is presented for younger readers by Harold McCracken in THE BIGGEST BEAR ON EARTH, a fictionalized

account with many good pictures. (*Stokes, \$2*)

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Just Off Press

HOW TO TREAT THE GERMANS—Emil Ludwig—*Willard*, 96 p., \$1., paper. The well-known biographer presents a character portrayal of the German people which he believes will contribute to the making of a more lasting peace.

INSTRUCTION BOOK FOR GOVERNMENT UTILITY GAS PRODUCER—Ministry of War Transport—*British Information Services*, 32 p., illus., 45 c., paper.

AN INTRODUCTION TO THE CERAMICS OF TRES ZAPOTES VERACRUZ, MEXICO—C. W. Weiant—*Gov't. Printing Office*, 220 p., illus., 40c., paper.

THE 1943-44 FARMER'S TAX MANUAL—William C. Clay, Jr.—*Doubleday, Doran*, 72 p., illus., \$1., paper.

OUR ARMY TODAY—Kendall Banning—*Funk & Wagnalls*, 259 p., illus., \$2.50.

THE PSYCHOLOGY OF JUNG—Jolan Jacobi, translated by K. W. Bash—*Yale*, 166 p., illus., \$2.50. Foreword by Dr. Jung.

ROAD TO PEACE AND FREEDOM—Irving Brant—*Bobbs, Merrill*, 278 p., \$2.

SCIENCE AT WAR—George W. Gray—*Harper*, 296 p., \$3.

SYMPOSIUM ON POWDER METALLURGY—American Society for Testing Materials—*Am. Soc. for Testing Materials*, 55 p., illus., \$1., paper. Technical papers and extensive discussion on the subject at the Buffalo Spring Meeting of 1943.

VEGETABLE FATS AND OILS: Their Chemistry, Production, and Utilization for Edible, Medicinal and Technical Purposes—George S. Jamieson—*Reinhold*, 508 p., \$6.75, 2nd. ed., Monograph Series No. 58.

NUTRITION

Anti-Scorbutic Pine

► CHINESE soldiers threatened with scurvy due to their limited rations might take a hint from the Russians. Soviet scientists found that needles of ordinary pine trees contain vitamin C, and during the long siege of Leningrad a tea made from pine needles played an important role in preventing scurvy.

A tasty drink can be brewed with needles collected from ordinary pine trees or from any of the other conifers. Even hemlock needles can be used, for the deadly hemlock that Socrates drank was not made from an evergreen, but from a variety of wild parsnip.

Boiling water may be poured over the crushed needles and let stand until the tea has a distinct aroma of pine. A more interesting drink could be made by letting the needles, cones or even green

bark of the tree ferment in wine or beer.

Although the needles do not contain a large amount of the vitamin so important in preventing scurvy, repeated use of one of these drinks would help make up for a threatened deficiency.

The finding of another source of vitamin C by the Russians, reported in *Science*, is new from a biochemical angle. Actually, however, tea from pine needles has been used to combat scurvy on a number of occasions in the past.

Even bears seem to know that evergreen needles are helpful. Black bears have been observed stuffing themselves with the rough "greens" when they emerge from hibernation, gaunt and haggard, in early spring. (*See SNL, Aug. 21*)

Science News Letter, November 27, 1943