

MEDICINE

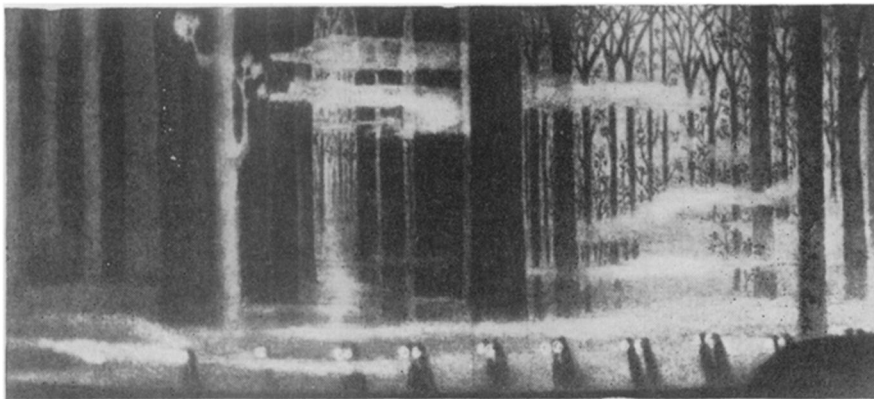
Penicillin For All

Physicians can, by following simple directions, supply themselves with the germ-fighter from mold for local treatment of infections.

► YOUR DOCTOR cannot, except under unusual circumstances, get penicillin, the germ-fighter from mold, for use in treating civilian patients, since almost the entire supply is reserved for the armed forces.

Any physician, however, can if he wishes make in his own home kitchen a supply of crude penicillin for treatment of staphylococcal and several other coccal infections in or near the surface of the skin.

Details of the method, reported by Dr. Julius A. Vogel, of the Jones and Laughlin Steel Corporation, to the Industrial Hygiene Foundation, are given here as a public service to patients and their physicians who may not have had an opportunity to hear Dr. Vogel's report. His method is an adaptation of one developed by Dr. George H. Robinson and Dr. James E. Wallace, of the Allegheny General Hospital, Pittsburgh. (See SNL, Oct. 23)



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What's the word you think most of at Christmas?

THERE'S one word men of good will everywhere associate with Christmas.

That word is "*Peace. Peace on earth*". . .

There can be no peace this Christmas. Not one of us would want the only kind of peace there could be, an inconclusive peace.

But we do want the right kind of peace as soon as possible. And this Christmas we

can help hasten the coming of that wonderful day, by making War Bonds our chief gift.

Every Bond you buy brightens the chances of a better world than man has ever known.

How, then, could you possibly give a better present than Bonds, Bonds, Bonds? Give them to each member of the family. Give them to your friends. Give them to everybody.

Give War Bonds for Christmas

"The 150-millimeter Pyrex petrie dishes are first washed in soap and water, rinsed and dried," Dr. Vogel directs. "Then 28 x 24 mesh absorbent gauze is folded into eight thicknesses. Circular patches of this folded gauze the size of the base of the petrie dish then are cut out and placed in the dish and covered with the lid.

"The entire petrie dish containing the gauze is then placed into the bake over for one-half hour at a thermostat temperature of 400 degrees Fahrenheit. If the accuracy of the thermostat is doubted, a safe method is to apply heat until the gauze begins to show a slight tinting of scorch.

"They are then removed from the oven and allowed to cool. Using a glass marking pencil, the date of culturing them is written on the top of the glass so that successive cultures cannot be confused with one another.

"To conserve time the culture medium is prepared and a one pint bottle and its screw cap are sterilized by boiling in water for 20 minutes while the petrie dishes are sterilizing in the oven.

"One pint of distilled water is placed in the base of a glass coffee pot and to it is added dehydrated yeast, drams one and one-half, and glycerine, drams three. Then a separate mixture of dextrose, drams three; cornstarch, drams three; and cold distilled water, one ounce, are thoroughly mixed in a tea cup. This is then added to the contents of the glass coffee maker, stirred well and boiled for 20 minutes over a low flame.

"At the end of this time the bottle and screw cap are removed from the boiling water, making certain not to contaminate the lip of the bottle or the inner side of the screw cap. The boiling solution is immediately poured into the bottle and sufficient boiling distilled water is added to fill it. The cap is applied and it is shaken well to produce a homogeneous mixture.

Wipe Off Bottle Neck

"When the petrie dishes and the culture medium have cooled sufficiently, the neck of the bottle is wiped off with a gauze sponge saturated with 70% alcohol. In a few minutes the alcohol has evaporated from the surface and two ounces of medium is poured into each petrie dish, raising one side of the lid of the petrie dish sufficiently to admit the mouth of the bottle, while at the same time being careful not to touch the petrie dish with it.

"A flamed platinum loop is then touched to the stock culture (of the mold,

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.

Science News Letter, November 27, 1943

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)

Science News Letter, November 27, 1943

► 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.

Science News Letter, November 27, 1943

► 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)

Science News Letter, November 27, 1943

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