MEDICINE

Streptomycin Now in Use In Army Hospitals

➤ CIVILIANS are not the only ones having difficulty in obtaining streptomycin, new sister drug to penicillin. Although this new antibiotic is now being used in 30 Army general hospitals, joint Army-Navy expectations for September are about double the anticipated production, it appears from a statement made by Maj. Gen. Norman T. Kirk, Surgeon General of the Army.

"Joint Army-Navy expectations for September are 162 ounces," he said, "but it is anticipated that production will be not more than 70 ounces. It is hoped that Army-Navy procurement can be doubled in October—for military needs alone now are about 2,000 ounces a month."

The standard daily dose, given in three injections over a 24-hour period, is one gram, or about one-thirtieth of an ounce.

Production of streptomycin is limited because it is obtained from an organism found in the soil and must be grown under carefully controlled laboratory conditions which cannot be hurried.

Similar difficulties in production of penicillin in the early days were overcome in part because of the pressure of war needs and with the aid of wartime priorities. The industry, Gen. Kirk said, is doing what it can to supply the demand for streptomycin without the aid of the advantages penicillin production had.

General Kirk explained that the Army's principal needs are for treatment of soldiers with severed spinal cords who developed urinary tract infections because of a loss of bladder function; and to some extent in treating some cases of meningitis and other infections which do not respond readily to penicillin therapy.

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ORDNANCE

All-Electric Torpedo Used Against Jap Shipping

➤ ANOTHER SECRET weapon used successfully against the enemy, the Mark 18 all-electric torpedo is credited with sinking over a million tons of Japanese shipping, some 300 ships, ranging in size from 500 ton cargo vessels to 42,500 ton battleships.

Announced by the Navy Department, the torpedo, its electric motors powered by specially designed storage batteries, speeds just below the surface of the water leaving no tell-tale wake to warn the enemy in time to maneuver out of its path.

The boiling wake left by steam turbine driven torpedoes points a finger of bubbles to the approximate position of the submarine, and destroyers have but to charge back through the torpedo's course and drop depth charges in the area before the slow moving submarine can slink off to safety. Submarines, if not destroyed by the depth charges, frequently suffer damage caused by the concussion of the exploding charge.

Designed specifically for under water firing, the Mark 18, less able to withstand the impact of striking the water in above-the-surface firing, is not used by PT boats, torpedo bombers or destroyers. Gyroscopically controlled, it is over 20 feet long, weighs about one and a half tons and contains some 2,000 parts.

Manufactured solely by Westinghouse Electric Corporation's plant at Sharon, Penna., its cost is approximately $6,500, about two-thirds that of the corresponding steam torpedo for submarine use. The first attack by electric torpedo fired by a U. S. submarine was made in September, 1943.

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PSYCHIATRY

Mentally Ill People Likely to Be Color Blind

➤ THE MENTALLY ill are much more likely to be color blind than normal individuals. Approximately one out of every three men suffering from schizophrenia, the most common of mental diseases, had trouble in distinguishing colors, Dr. Harold M. Kaplan, Dr. Roland J. Lynch and associates at the Hospital for Mental Diseases, Secaucus, N. J., found by studying 403 cooperative psychotic patients.

A comparatively large number of mentally ill women were also found to be partially color blind, they reported to the *American Journal of Psychiatry*. The greatest number of schizophrenics of both sexes with color defects were unable to distinguish red from green.

These figures include only those who actually wanted to take part in the test. Others who refused to cooperate or whose natural tendency to give false replies made their scores worthless were excluded.

The doctors suggest the possibility that color blindness is not a peculiarity of the eye, but is associated with other body and mental features.

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IN SCIEN

MEDICINE

Some Skin Troubles May Be "Skin Diabetes"

➤ BOILS, ECZEMA, sweat gland abscesses and itching skin that fail to clear up with other forms of treatment may be "skin diabetes" and if so will respond promptly to a diet low in sugars and starches, Dr. Erich Urbach, of the University of Pennsylvania Medical School, reports in the *Journal of the American Medical Association* (Oct. 6).

Patients with this condition do not have symptoms of diabetes such as sugar in the urine or abnormally large amounts of sugar in the blood. Dr. Urbach believes that the condition is one in which the skin fails to utilize carbohydrates properly, perhaps because of some interference with the action of insulin involving only the tissues of the skin.

"Skin diabetes," therefore, is in his opinion a suitable term for the condition. Chemical analysis of tiny bits of skin show that in such cases the skin is storing more sugar than normal.

A typical diabetic diet, sometimes with insulin, clears up the skin condition promptly. If the patient goes back to a normal diet, the eczema, boils or other skin disorder reappears.

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CHEMISTRY

Pack Fresh Vegetables In Ice for Vitamin C

➤ PACKING freshly harvested vegetables in crushed ice is the best way to prevent loss of vitamin C during transportation and storage because it combines moisture and low temperature. After three days of storage in crushed ice, Swiss chard, broccoli and lettuce still held most of their original vitamin C, investigations conducted by the Wisconsin Experiment Station showed. Leaf lettuce, after six days of storage packed in ice and held in a cold room had lost less than 10% of its C.

The common practice of sprinkling lettuce or spinach to keep it fresh in retail markets was found to be of little help in saving the C vitamin. Moisture without refrigeration is of no benefit.

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CE FIELDS

ORNITHOLOGY

Pacific Island Birds May Become Extinct

➤ MANY SPECIES of Pacific island birds may become extinct because of military occupation, report Dr. Harvey I. Fisher, University of Hawaii ornithologist, and Paul H. Baldwin, U. S. National Park Service, who recently completed a survey of birds on Midway island.

Two species of birds formerly plentiful on Midway already most likely have become extinct, Dr. Fisher and Mr. Baldwin state. The Laysan rail and the Laysan finch, both of which were plentiful on Midway in 1941, have probably been wiped out. The only other known habitat of these species is Laysan island in the Midway group, from which both are believed to have disappeared some years ago.

Other birds, though perhaps not so rare, have also suffered. The "gooney bird", or Laysan albatross, has been reduced to less than half its estimated 1941 population. Whereas there were half a million Bonin Island petrel in 1941, the present population is estimated as 25,000. Only three noddy terns were found on Midway, where 2,000 were believed to exist before the war.

The importation by military shipping of rats which kill off birds; use of large areas for buildings, lawns and walks, eliminating vegetation and cover; and unavoidable slaughter of birds by planes landing and taking off are some of the reasons why military occupation of an island is devastating to bird populations. In addition, birds are unavoidably trapped in barbed wire, old gun emplacements and fox-holes. Bird eggs are also collected for eating.

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CHEMISTRY

Synthetic Tire as Good as Natural Rubber Tire

➤ A NEW synthetic rubber tire for automobiles, claimed as good as natural rubber tires, is made of a special variety of government GR-S-10 synthetic rubber in which a rosin-base soap replaces fatty-acid soap as an emulsifying agent. This is an important factor in attaining better wear, cooler running, and greater resistance to cracking and carcass bruising.

Another factor is the design of the tire. It has a tread that is wider than that of the conventional tire, which makes it roll more squarely and flatly along the pavement. Contrary to popular belief, this is a basic advantage, producing longer and more uniform tread wear, according to F. Ray Campbell, representative of the B. F. Goodrich Company whose engineers developed the new tire. The increased contact area of the tread means greater stability, better distribution of weight, and less scuffing of the tread, he states.

The new tire has a riding bar instead of a center groove, and this, along with other construction, gives it crack-growth resistance more than half again as great as that of comparable standard-design tires, it is claimed by the manufacturers. It is expected that the new tire will be available to the public reasonably soon.

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CHEMISTRY

Rubber Extracted By Fermentation Process

➤ RUBBER LOCKED up in the leaves of a tropical vine belonging to the milkweed family can be released through a fermentation process in which bacteria are used, members of the American Chemical Society were informed by a communication from Sam R. Hoover and associates at the Eastern Regional Research Laboratory of the U. S. Department of Agriculture. The paper was sent in for the Society's "meeting-in-print," which is being substituted this year for the regular meeting, called off because of wartime travel restrictions.

The vine, known botanically as *Cryptostegia grandiflora,* has the rubber scattered in the form of tiny globules through the green cells of its large, tough leaves, as well as in the latex vessels. No satisfactory means has ever been found for the mechanical extraction of this rubber, nor is chemical extraction effective as long as the leaves are intact. A decay-producing bacterium, *Clostridium roseum* solved the problem. It broke down the leaf structure and released the cell contents in which the rubber globules were embedded. These were screened out of the debris, then treated with chemical solvents to get out the rubber.

Laboratory tests, as well as incorporation with GR-S synthetic rubber in experimental tires, proved the Cryptostegia rubber to be of good quality.

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CHEMISTRY

Hydrochloric Acid Keeps Canned Vegetables Fresh

➤ VICTORY garden vegetables were kept from spoiling by adding enough dilute hydrochloric acid to make them very sour, in canning experiments carried on at Ohio State University by Prof. R. C. Burrell and three young women assistants, Miss Esther M. Johnson, Miss Beverlee J. Rice and Miss Phyllis J. Sohn. Results are reported in detail in the *Journal of Chemical Education* (Aug.).

The experiments were undertaken in an effort to find some means for keeping vegetables safe from bacterial spoilage and possible development of the deadly botulism contamination, in the face of the war-caused scarcity of pressure cookers. It was known that most bacteria cannot thrive in media of relatively high acidity. Hydrochloric acid was selected because while it is poisonous in concentrated form, in a dilute condition is not only harmless but a normal part of the gastic juice.

When the vegetables were acid enough to discourage spoilage bacteria they were much too sour to eat. This was overcome by stirring in a little baking soda just before preparing them for use.

An added benefit of the acid canning was the retention of most of the vegetables' vitamin content.

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ENGINEERING

Gas-Diesel Engine Has Higher Thermal Efficiency

➤ A NEW engine, developed by the Cooper-Bessemer Corporation, delivers more power for the amount of fuel consumed than any engine heretofore produced, it is claimed. It is a turbo-charged gas-diesel engine. Technically, it has high thermal efficiency, which is the term for the amount of fuel consumption in relation to power developed.

Its thermal efficiency is rated as over 40%, which is a higher record than ever obtained by a steam, gas, gasoline, gas turbine or diesel engine, the manufacturers state. The record was set during routine tests. The best record, heretofore, was established by the diesel engine, which operates usually between a range of 32% and 36%. The highest thermal efficiency claimed for a gas turbine engine is 29%; gas and gasoline engines usually attain up to 25%, and reciprocating steam engines from five to 18% thermal efficiency.

Science News Letter, October 13, 1945