

MEDICINE

Transfusions Needed in Severe Pneumonia Cases

► BLOOD and plasma transfusions are needed to complete the life-saving effect of penicillin, sulfa drugs and serum in severe pneumonia, four Boston physicians point out in a report (*Journal, American Medical Association*, Feb. 10).

The four physicians are Drs. S. Howard Armstrong, Jr., Albert C. England, Jr., Cutting B. Favour and I. Herbert Scheinberg.

In two cases they report, penicillin stopped the pneumonia germs, but the patients became so anemic and so starved for protein that they almost died. One patient, an 85-year-old man who developed pneumonia after a prostatectomy, probably had been undernourished and anemic for some time before the operation and pneumonia. Badly fitting false teeth and poor appetite led to a diet consisting chiefly of tea, starches and sweets, with a daily eggnog and occasionally a small piece of pork.

In the other case, there was no sign of undernourishment before the pneumonia. The attack was so severe, however, and involved so much of his lungs that even though the germs were stopped by penicillin, the patient was "in desperate need" of treatment to relieve the difficulty in breathing and in getting enough oxygen into his blood to keep life going.

Such cases will be seen increasingly often, the Boston physicians believe, as powerful antibacterial drugs such as penicillin control germ infections that would otherwise be fatal. They suggest that in severe pneumonias physicians anticipate the development of anemia and deficiency of protein in the blood and give blood and plasma transfusions and adequate protein in the diet early in the sickness.

Science News Letter, February 17, 1945

PHARMACOLOGY

English Titles to Be Used In New Pharmacopoeia

► DOCTORS may still write their prescriptions in Latin, but when they look up a drug in the Pharmacopoeia, they want to find it under its English name. Consequently English titles will take first place, Latin titles second place in the new U. S. Pharmacopoeia, scheduled to appear in December 1945, according to an announcement from Dr. E. Fuller-

ton Cook, chairman of the U. S. P. Committee of Revision. Although medical members of the Revision Committee have been the chief advocates of this change, other users of the Pharmacopoeia besides physicians are expected to benefit, since the new style makes possible the grouping of related products in one place.

At present digitalis preparations, for example, are scattered through the book under class names such as Capsulae, Injectio, Tabellae, Tinctura, and the like. This resulted from the style of putting substances in alphabetical order under their Latin titles. The person looking up digitalis capsules had to hunt under Capsulae through all the other kinds till he came to Capsulae Digitalis. Then if he wanted to compare these with requirements or standards for digitalis tablets, he had to search under Tabellae. With the new style, he will merely look for digitalis. All U. S. P. digitalis preparations will be grouped there in alphabetical order.

The Latin titles will not be dropped, but will be placed after the English titles.

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CHEMISTRY

John W. Thomas Receives American Chemical Award

► THE GOLD medal of the American Institute of Chemists has been awarded to John W. Thomas, chairman of the Firestone Tire and Rubber Company, in recognition of his leadership in rubber research during the past four decades and for achievements in the development and production of synthetic rubber made under his direction. The medal will be presented on May 11 at Columbus, Ohio, during the twenty-third annual meeting of the Institute.

This medal is awarded annually by the Institute for noteworthy and outstanding service to the science of chemistry or the profession of chemist in America. The recipient is selected by a jury of outstanding chemists representing the Institute.

Mr. Thomas, the son of a Welsh coal miner, worked his way through what is now the University of Akron, and received a bachelor of science degree in 1904. In 1908 he installed the first chemical laboratories at Firestone. He made chemical research a major arm of the industry and directed work which developed tires of synthetic rubber more than a dozen years ago.

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IN SCIEN

ENGINEERING

Floating Refrigerators To Carry Cheese, Eggs

► THERE'LL BE ice cream, fresh meat, cheese, and eggs for American soldiers stationed in the Pacific war theater, brought to them in a new type of barge the Army has built for the purpose, the War Department reports. Three floating refrigerators, each costing \$1,120,000, can store 64 carloads of frozen meats at 12 degrees above zero in the eight main holds. Two main deck compartments each have a capacity of about 500 measurement tons of fresh vegetables, cheese, eggs, and other perishable produce.

In addition, each barge has a special unit that turns out 10 gallons of ice cream every seven minutes and a plant that manufactures five tons of ice a day. The barge's elaborate cooling machinery is operated by 84 electric motors with capacities up to 150 horsepower. A complete change of arctic air is provided every four minutes to all chill and freeze compartments by 12 blowers.

The barges have flat-bottomed concrete hulls, are 265 feet long with a 48-foot beam and a 12- to 15-foot draft. They carry a crew of 10 men and 13 officers. The floating refrigerators will operate only in the southwestern and western Pacific. Small boats, operated by the Transportation Corps, will pick up the cargo and deliver it to troops, on an inter-island service.

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CHEMISTRY

Enamel-Lined Tubes Used To Make Hydrogen Peroxide

► A new way has been devised to make hydrogen peroxide—a compound of even greater importance in industry than it is in the theater district. Dr. Gerhard A. Cook of Snyder, N. Y., makes it directly from oxygen and hydrogen gases by putting a properly proportioned mixture through enamel-lined tubes with very smooth walls at a temperature of around 520 degrees Centigrade, at moderately high pressures. On this process he has received patent 2,368,640, rights in which are assigned to the Carbide and Carbon Chemicals Corporation.

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CE FIELDS

PUBLIC HEALTH

Twice As Much Undulant Fever Reported This Year

➤ ALMOST twice as many cases of undulant fever have been reported to the U. S. Public Health Service so far this year as during the corresponding period of 1944. The total to Feb. 3 was 354, compared with 184 for the same period last year.

Undulant fever is also known as Malta fever and brucellosis. It is not often fatal but is a long drawn-out sickness, lasting sometimes for years. The suffering, disability and economic loss are considerable.

People get undulant fever, usually, from drinking raw goat's milk or raw cow's milk that contains the germs. Pasteurizing milk is a sure safeguard against undulant fever from this source. Humans may also get the hog variety of brucellosis, but this is not very common. Farmers, veterinarians, slaughterhouse employees, butchers and even cooks can get it from handling infected meat or from close contact with infected animals.

Reporting of cases of undulant fever is now required in all 48 states and the District of Columbia. Last year, however, was the first in which all states reported the disease. It is possible that during this first year not all cases were reported while more are being reported this year. This might account for some of the increase.

The nation's health is otherwise good with no major increases in communicable diseases reported to the U. S. Public Health Service.

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ENGINEERING

Snow May Be Melted as It Falls on Airport Runways

➤ SNOW WILL be melted as fast as it falls on airport runways, if suggestions made by radiant heating experts are put into practice. Underground piping carrying steam or hot water would be used similar to systems successfully operating in the floors of factories and for heating homes. The same method is already used under outdoor walkways and loading strips to keep them clear of ice and snow. It would be cheaper in the long run, it

is claimed, than the present expensive operation of keeping runways cleared by the mechanical removal of the snow.

Snow removal from runways on commercial airports is one of the major problems in areas with heavy snowfalls and many flights have to be cancelled because runways are often snow bound. Airports now are required to have heavy investments in snow-removal machines and expend large sums for labor. Underground heating of the runway to a temperature of about 45 degrees would turn the snow to water, and evaporate the water, keeping the runway dry and always in condition for use. It would do so, it is claimed, at a much less cost than present mechanical removal operations.

The cost of installation would constitute the principal expenditure. Operation and maintenance costs would be low, as heat would be applied to the runway only while snow is falling or drifting. Snow in the air does not make flying hazardous unless severe, but snow or ice on the runways where planes must land is dangerous.

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GENETICS

Heredity-Changing Drug Applied by Aerosol Method

➤ COLCHICINE, the drug that changes the hereditary characters of plants by increasing the number of chromosomes per cell, can be applied effectively to scores or hundreds of young plants at a time by the aerosol method, originally used with insecticides to make wholesale kills of winged pests. Use of colchicine as an aerosol was developed by three U. S. Department of Agriculture research scientists, J. W. McKay, P. C. Burrell and L. D. Goodhue, at the great experiment station at Beltsville, Md. They present preliminary results (*Science*, Feb. 9).

Greatest effect in changing the genetic makeup of plants was obtained when the dose was most drastic, the three researchers state. They got highest percentages of change among survivors of blocks of young plants after aerosol-spray treatments that killed most of the seedlings with which they started out.

They also suggest that better penetration of the colchicine, and hence most effective use, may be obtained by mixing into the solution some mildly poisonous chemical that will lower the resistance of growing tissues to penetration. They state that they are now at work on experiments along this line.

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CHEMISTRY

Rubberlike Plastics To Coat Cloth, Paper

➤ NEW RUBBERLIKE plastics, with valuable wartime and postwar uses, will be made in the near future in a new plant to be constructed by the Goodyear Tire and Rubber Co., which will have a capacity of 3,000,000 pounds a year. The new materials, developed by scientists of the company during the past two years, can be used to coat cloth and paper, package foods, drugs and tobacco, insulate electric wiring, and protect machinery during shipment to tropical regions.

These new synthetics, that can be used to relieve the critical shortage of natural rubber products, are vinyl chloride copolymers. They are made by passing two gases, acetylene and hydrogen chloride, over catalysts in large tanks by a process very much like that used in making GR-S rubber from butadiene and styrene. GR-S rubber is a co-polymer made by joining the molecules of butadiene to the molecules of styrene. Each of the new co-polymers to be made in the new plant will consist of molecules of vinyl chloride joined with the molecules of some other substance to form the giant molecules of the plastic.

The new plastics can be vulcanized like rubber in the equipment ordinarily used by the rubber industry for that purpose. They resist the deteriorating effects of sunlight, and are also oil-resistant and may be used for gaskets and washers, wherever an elastic, rubberlike substance resistant to oil is required.

An experimental tire has been made of the new material, but it is not expected at present that it will come into general use for tires.

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ORDNANCE

Two-Wheeled Carriage For the Heavier Mortars

➤ MORTARS, which up to now have gone into action on men's shoulders, on muleback, or in trucks, are put into the field artillery class by Edgar W. Brandt, the French inventor who is responsible for much of their improvement over the crude weapons of World War I date. He provides a two-wheeled carriage for the heavier types; though his design calls for slipping them off the wheels and onto the customary base plates when preparing to fire.

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