

MEDICINE

Spoiled Sweet Clover Has Anti-Blood Clot Chemical

ACHEMICAL from spoiled sweet clover may replace heparin, anti-blood clotting agent which has itself only been available for practical uses within the last two or three years, Dr. H. R. Butt, Dr. E. V. Allen and Dr. J. L. Bollman, of the Mayo Clinic, report as a result of first trials of the new chemical.

The new anti-blood clotting substance is the chemical responsible for an often fatal bleeding disease of cattle that have eaten spoiled sweet clover. It is a coumarin compound which was isolated and prepared synthetically by Prof. Karl Paul Link and associates at the University of Wisconsin.

Advantages of the new remedy are its effectiveness when given by mouth, its prolonged action in lengthening the clotting time of the blood, and its cheapness. More studies are needed, the Mayo Clinic doctors state, to determine fully the usefulness of this coumarin compound and how best to give it to patients in danger of developing blood clots that may threaten life by plugging important blood vessels.

Science News Letter, July 19, 1941

PSYCHOLOGY

Timing Breaks Down First When Skilled Workers Tire

TIMING is the first thing to go wrong when workers at highly skilled tasks get tired, Prof. F. C. Bartlett, noted British psychologist, says. (*Nature*, June 7.)

"Until a state of great fatigue is reached," he said, "it is far more likely that the right actions will be performed at the wrong times than that the wrong actions will be performed. If accurate timing is insisted upon, gross mistakes of action may appear."

The worker at such highly skilled tasks is, unfortunately, unaware when his work deteriorates with fatigue. He is likely to think he is doing better work, Prof. Bartlett found, because he becomes more and more lenient in his judgment of what errors are significant.

When he does recognize an error, the fatigued workman is likely to blame it on conditions or on the interference of other people.

The fatigue that comes from highly skilled work makes the worker "forget" details not closely organized with the

main part of his work. Yet at the same time, he is more easily distracted by things that have nothing directly to do with the task. Bodily sensations, such as hunger or thirst, become more pressing and insistent and affect the performance of the worker.

Previous psychological studies of fatigue have not revealed the effects of fatigue from skilled work, because they have been based on the repetition for a long period of simple, easy tasks such as the naming of colors or the working of easy arithmetic calculations.

The kind of fatigue resulting from doing such simple tasks over and over is not the same, Prof. Bartlett said, as that which comes from skilled jobs, particularly those involving difficult mental work.

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PHYSICS

Gets Patent for Heater Using Sun's Rays

COOKING by the sun's rays may be made easy with a new invention just granted U. S. Patent 2,247,830. It was issued to Dr. Charles G. Abbot, secretary of the Smithsonian Institution, who has for a number of years been experimenting with methods of using directly the energy from the sun.

One object of the invention, given in the patent specifications, is "to provide a novel solar heater which is highly efficient, compact, cheap to manufacture, durable and easily used by the inexperienced." Another is that it "may be made of any desired small size without decreasing the efficiency."

To collect the sun's rays there is a metal mirror, bent to the shape of a parabola. Its long direction is parallel to the axis of the earth, and there is a clockwork to turn it during the day to follow the sun. In this mirror, where the solar rays are sharply focussed on it, is a double-walled glass tube, through which circulates a black liquid with a high boiling point. This absorbs the rays and is heated. The hot liquid then circulates through an oven at the upper end of the device, so that it may be used for cooking.

Paradoxically, Dr. Abbot suggests that the heater may be used for cooling. With a refrigerator of the non-mechanical type in which the heat of a gas flame provides the operating energy, the heat from the cooker may be used instead.

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IN SCIEN

GENERAL SCIENCE

University of Poznan Now University of Posen

THE once Polish University of Poznan has now become the University of Posen, reopened this summer under German direction and for German students, according to a brief report from the Nazi capital which has just reached the United States. The city of Poznan is in the western part of Poland, which has been set aside for permanent and total German occupation; Posen is the German spelling of its name. Its university is one of the newest in Europe, dating only from immediately after the close of World War I. Before the outbreak of present hostilities, it had a student body of something more than 5,000.

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BIOLOGY

10,000 Human Offspring By Artificial Insemination

ARECORD of nearly 10,000 American children brought into the world with the aid of the proxy-father procedure technically termed artificial insemination is reported by Dr. Frances I. Seymour and Dr. Alfred Koerner, of New York, (*Journal, American Medical Association*, June 21). The figures were collected through a survey sponsored by the National Research Foundation for Eugenic Alleviation of Sterility, Inc.

The central and Atlantic seaboard sections of the United States have the greatest number of children sired by artificial insemination. Donors were used in 3,649 of the 9,489 pregnancies.

More than 97% of all the pregnancies resulted in living, normal babies. The number of miscarriages and abortions was only one-fifth the rate among women achieving pregnancy without the aid of artificial insemination. More than 1,000 mothers had more than one baby with the aid of this method.

More than 400 surgical operations of the type frequently performed on mothers to sure sterility were prevented.

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CE FIELDS

MEDICINE

Response to Doctors For Britain Request Lagging

RESPONSE to the request of the British Red Cross for "Doctors for Britain" has been lagging. The original request, made some months ago, was for 1,000 physicians, but, although more than 1,000 inquiries have been received from physicians, so far only two men have reached the stage of passing physical examinations and being granted United States passports, the *Journal of the American Medical Association* reports. (July 5.) By the middle of July approximately 90 men would be the response to the request, the *Journal* predicted.

This rather ungratifying response is explained as due to frequent statements in medical journals of our own near-shortage of physicians and the apparent imminence of our entrance into the war.

The American Red Cross and the special committee of the National Research Council are continuing their efforts to meet the British request for doctors.

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PUBLIC HEALTH

No Ground for Alarm About National Health

EVEN though the percentage of rejections for military service under the Selective Service Act is much higher than during 1917-1918, "there is no ground for alarm about our national health," statisticians of the Metropolitan Life Insurance Company declare. (*Statistical Bulletin*, June).

"The death rate is the lowest on record and the longevity is at its peak," they declare.

"Longevity among American wage-earners and their families, as measured by the average length of life, very nearly attained the 63-year mark at the beginning of the present decade."

Longevity among this group has improved steadily every year during the past decade, it is pointed out.

Figures on military rejections today and during the first World War are

"for the most part not comparable," the statisticians point out, because of the difference in conditions under which the men are examined. Because we are still at peace, the Army can afford to make its standards higher and to take more time for examinations to weed out men unlikely to withstand the mental as well as the physical strain of war.

"Moreover, the chief cause of rejection for standard insurance at these ages is overweight, but only a few of these—the very obese—are ineligible for any form of insurance. Heart disease or abnormality is the next leading cause of rejection for standard insurance among men of draft age, but well in excess of 40% of this group are eligible for substandard insurance."

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PHYSICS—BOTANY

Radioactive Rubidium Is Tool for Studying Life

RUBIDIUM, a chemical element closely related to the more common sodium and potassium, can be made to give off rays like those of radium. In this form it is a useful tool for studying the life processes of living plants, a research trio of the University of California have discovered.

Dr. August Helmholz, instructor in physics, Dr. Charles Pecher, research fellow in the Radiation Laboratory, and Dr. P. R. Stout, junior chemist in the division of plant nutrition, have made these studies. (*Physical Review*, June 1).

Potassium is an important element in plant nutrition. With the rays from the cyclotron, or "atom-smasher," it can be produced in a radioactive form. Then, fed to plants, its progress may be followed by the rays that it gives off as it reaches different parts. However, radioactive potassium quickly decomposes. Half of any amount is gone within 12 hours, and this has imposed a limit to its use.

Rubidium, however, is so similar chemically to potassium that it may be used in its place. Its radioactive form lasts for 19 days. Another advantage is that very minute quantities may be made with high activity, but it can also be produced in relatively large amounts.

In preparing radioactive rubidium, these modern alchemists start with an entirely different element, strontium. Under the influence of 16 million volt atomic bullets from the cyclotron the transmutation into rubidium takes place.

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METEOROLOGY

Weather Bureau Asks Ships For Radio on Hurricanes

DESPITE wartime hush-hush on most ships' radios, the U. S. Weather Bureau is urging ships at sea in the southern North Atlantic, Caribbean, and Gulf of Mexico to report by wireless when they encounter a hurricane or find themselves in the neighborhood of one. This information is valuable to other ships, as well as to islands in the path of such a storm, frequently making possible the saving of lives and property, the Weather Bureau points out.

Messages may be sent in the international code which has been devised for such purposes, or in plain language. Ships need not disclose their identity; omission of signature is indeed preferred.

One significant addition has been made to the request, which is published in the Navy Department's *Hydrographic Bulletin*. The last sentence in the column, printed in boldfaced type, reads: "Ships of the United States Atlantic Fleet will not make weather reports except as authorized by the Commander-in-Chief, U. S. Atlantic Fleet."

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PHYSIOLOGY

Discover Age at Which Thyroid Gland First Works

THE EARLIEST age at which the thyroid gland, one of the body's most important organs, starts functioning has been discovered by Dr. Aubrey Gorbman and Dr. Herbert M. Evans, of the Institute of Experimental Biology at the University of California.

The thyroid is a U-shaped gland in the neck which, when enlarged, causes the swelling known as a goiter. This gland controls or regulates many body functions, acting through its hormone which contains iodine. Using tagged atoms of radioactive iodine from the cyclotron, the California scientists found that in frogs, the thyroid gland starts using iodine to make this hormone, and therefore to perform at least some of its important functions, when the frog is still in the tadpole stage and its thyroid gland consists of as few as 60 tiny cells. No iodine was discovered in the younger, just hatched tadpole larvae, indicating that their thyroid glands had not yet started functioning.

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