

BOTANY

New Chemical Appears To Kill Poison Ivy

BACKYARD gardening or a picnic in the public park may be freed of poison ivy hazard if a new chemical tested at the University of Wisconsin for killing the plant proves generally successful.

The new chemical is ammonium sulfamate. It was tested last year by John Callenbach and John Carpenter of the University of Wisconsin who mixed it at the rate of one-half pound to one pound per gallon of water. They applied about a gallon of spray to each 100 square feet of orchard area last June. The chemical probably would not be safe for use near lawn grass.

If the poison ivy fails to come back this season, the ammonium sulfamate treatment will be considered completely successful. Mr. Callenbach and Mr. Carpenter used a coarse spray to keep it from drifting, holding the spray gun as low as possible and directing the spray just over the top of the ground cover. They used a spray gun equipped with a No. 7 disc and a pump pressure of 200 pounds. In Wisconsin, the ivy-killer will be of particular interest to orchard owners and workers.

Science News Letter, April 25, 1942

BIOLOGY

Biology as High School Subject Is Losing Ground

BIOLGY as a high school subject has suffered a slight but definite loss of ground during the past ten years, states Dr. Oscar Riddle of the Carnegie Institution of Washington. Dr. Riddle bases his conclusion on the study made by a committee under his chairmanship of something over 3,000 replies to a questionnaire circulated to nearly 16,000 teachers in secondary schools throughout the country. (*Reviewed, SNL, this issue.*)

There have been gains in some schools, losses in others, with the losses exceeding the gains over the country as a whole. In about 10% of our schools, the biology course has been dropped to make way for one in the social sciences.

A definite tendency on the part of teachers and curriculum planners to avoid difficulties with group prejudices by omitting or "playing down" controversial subjects was noted by Dr. Riddle. About 14% of the public schools, and even more of the parochial high

schools, do not discuss the subject of in-born inequalities in human beings; and a full half of all schools from which replies were received avoid the teaching of evolution as a part of their biology courses.

"Data concerning biology clubs suggest that biology teaching in all community types and regions is often effective in stimulating the interest of pupils," Dr. Riddle states. "A consideration of the topics which teachers would emphasize leads to the conclusion that, though many biology teachers teach soundly and effectively, there is a widespread tendency to teach biology not as a science but (a) as a way to pleasing hobbies, or (b) as a series of practical technologies."

Science News Letter, April 25, 1942

ENGINEERING

Giant Stoppers Shut Pipes Of Grand Coulee Turbines

See Front Cover

THE HUGE stopper shown on the front cover of this week's SCIENCE NEWS LETTER will be used to stop 141 tons per second of water flowing to one of the 18 turbines at the Grand Coulee Dam in Washington, when it is necessary to shut the machine down. In the picture, the 18-foot, all-welded steel sphere is being examined with a 200,000-volt X-ray machine, before being put into service.

The all-welded steel liners of the pipes that carry the water are similarly examined. The generators, believed to be the largest in the world, have a capacity of 108,000 kilowatts — 145,000 horsepower.

Science News Letter, April 25, 1942

NUTRITION

Heat-Resistant Butter Developed By Army

A NEW "butter" developed by the Army Quartermaster Corps can be shipped without refrigeration and will resist temperatures up to 110 degrees Fahrenheit. Ten thousand pounds have already been shipped to U. S. troops overseas.

Named "Carter spread" after its inventor, Lt. Col. Robert F. Carter of the Quartermaster Corps, the new butter consists of dairy butter fortified with hydrogenated cotton seed oil flakes to raise its melting point. Quartermaster Corps officers say it still tastes like butter.

Science News Letter, April 25, 1942



GENERAL SCIENCE

Scientists Urged to Save Valuable Journals

SCIENTISTS feeling the patriotic urge to turn over to waste-paper collectors piles of old technical journals which they no longer need are urged to look them over first with an eye to their possible use in rebuilding war-damaged libraries abroad. Many such libraries have lost all or part of their files of scientific periodicals, or have been unable to keep them complete due to interruption of the mails or loss of shipments at sea.

The American Library Association has appointed a special committee which is functioning under the chairmanship of John R. Russell, librarian of the University of Rochester, N. Y. Scientists who have accumulations of old journals are requested to write to Mr. Russell, before turning them over to waste-paper drives.

Science News Letter, April 25, 1942

MEDICINE

Permanent Grafts Formed From Identical Twin's Skin

IF YOU are a twin and are badly burned, you have a chance of a permanent skin graft from your twin brother or sister, Dr. J. B. Brown of St. Louis stated before the American Association of Industrial Physicians and Surgeons meeting with the American Industrial Hygiene Association in Cincinnati.

Dr. Brown explained that skin from another person rarely forms a permanent graft. But skin of identical twins may form a permanent graft both in humans and experimental animals. Skin taken from one part of a patient and grafted onto a burned section also becomes permanent.

Dr. Brown noted that skin forms an ideal dressing for burns, even though the graft is not permanent. Better than gauze or other artificial dressings, human skin grafted over the burn tightly seals out air and infection.

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CE FIELDS

PHYSICS

Magnetic Needle Speeds Discovery of Meteors

TINY meteorites, "pebbles from heaven," weighing less than a 300th of an ounce have been discovered in Arizona by use of the magnetic needle.

Since last spring, Dr. Frederick C. Leonard, associate professor of astronomy at the University of California at Los Angeles, has been experimenting with this method. Under certain conditions, he declares, meteorites can be discovered when buried ten or twelve feet in the ground.

The magnetic method will greatly promote the long neglected study of meteorites which are the only tangible objects of astronomical inquiry, he said.

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MEDICINE

Hospital Growth Tripled Over 31-Year Average

AMERICAN hospitals grew three times as fast last year as during the previous 31 years, according to the 21st annual hospital survey of the Council on Medical Education and Hospitals of the American Medical Association.

For 31 years, the report says, the average net increase in hospital facilities was around 25,000 to 30,000 beds each year. The increase between the censuses of 1940 and 1941 was 98,136 beds, which is "astonishing even for this unusual period."

This growth, the report continued, is equal to construction of one 269-bed hospital every day, Sundays and holidays included, for a year.

Total capacity of registered hospitals was 1,324,381 beds and 66,163 bassinets. There are 98,136 more beds and 4,224 more bassinets than a year ago; reports were received for 6,318 registered hospitals out of a total of 6,358.

Results of a survey in January of this year of blood and plasma banks in approved hospitals showed that 462 of 1,070 such hospitals either had one or the other of these facilities or were in the process of establishing them.

Two hundred and six hospitals maintain both blood and plasma banks, with 17 others in the process of development. In addition, there are 171 hospitals operating plasma banks and 33 separate institutions with blood banks.

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MEDICINE

Arthritis Now Linked To Rheumatic Fever

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The two Mayo physicians felt that arthritis involves more than disease of the joints; that it involves the vital organs, the crippled joints being merely one expression of the malady.

They examined the organs of 30 patients who had had chronic infectious arthritis and found evidence of disease in the heart, kidneys, liver and other organs. There was damage to the heart in 24 cases and in 16 of these the injury was indistinguishable from that caused by rheumatic fever. Also significant was the pathologic condition discovered in the kidneys. It was felt that heart and kidney damage was due to the same underlying set of causes.

Drs. Baggenstoss and Rosenberg concluded there may be a relationship between chronic infectious arthritis and rheumatic fever, typically a disease of childhood.

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CHEMISTRY

Carbon Dioxide Discovery Wins Chemistry Prize

DR. Earl A. Evans, Jr., associate professor of biochemistry at the University of Chicago, has been awarded the 1942 Eli Lilly Prize of \$1,000 in biological chemistry, for research in the use of carbon dioxide by animal cells.

Dr. Evans was able to show that carbon dioxide, hitherto believed entirely a waste product in the animal body, was actually used in certain reactions occurring in the liver during the oxidation of sugar.

The prize was presented April 20 at the opening session of the meeting of the American Chemical Society in Memphis, Tenn. Dr. Evans delivered the Eli Lilly Award address April 22.

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CHEMISTRY

Organic Chemical Found Killer for Water Hyacinth

WATER hyacinth, introduced floating plant pest that chokes lakes and rivers in the South, harboring mosquitoes and ruining fishing, seems to have met its nemesis in an organic chemical known as sodium pentachlorophenate, called Santobrite for trade purposes. Dr. A. A. Hirsch of the Louisiana State Department of Education has discovered, in controlled experiments with the plants growing in a series of tubs, that a solution of as little as five parts of the chemical per million of water will sharply retard its growth, while 80 parts per million will kill it outright (*Botanical Gazette*).

The weaker concentration is suggested for economy's sake in places where the weed does not need to be eliminated but where control is desirable without harm to other aquatic life.

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MEDICINE

Sulfa Drugs Cause Thyroid Enlargement

ENLARGEMENT of the thyroid gland in the neck and a decrease in its activity are caused by the sulfa drugs, Dr. Julia B. Mackenzie and Dr. C. G. Mackenzie, of the Johns Hopkins School of Hygiene, have discovered.

Their discovery, made in studies of rats, mice and dogs, was reported to the American Society of Biological Chemists.

Sulfaguanidine, sulfadiazine, sulfapyridine and, to a lesser extent, sulfanilamide, all caused the thyroid gland enlargement. Another sulfur-containing chemical, thiourea, had the same effect to an even greater degree. In the case of rats given sulfa drugs, the enlargement of the gland was accompanied by a decrease in its activity, as indicated by lowered basal metabolic rate.

The enlargement of the gland as a result of sulfa drugs was prevented by doses of thyroxin, the hormone produced by the gland. Iodine, however, which the gland requires for manufacture of its hormone, did not prevent the enlargement due to the sulfa drugs.

Whether the sulfa drugs prevent the formation of thyroxin by the gland or whether they destroy it after it has been produced is not yet known.

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