

Do You Know?

Ginger is one of the few spices obtained from roots.

The *clove tree*, source of the well-known spice, is an island tree that is said to require salt air.

There are about 13 *penicillin-producing* establishments in the United States and Canada, representing an investment of some \$20,000,000.

Small portable *turbine*, reported developed and in use in Russia, requires only about two cubic meters of water a second to operate and can furnish electric light for 600 homes.

A few of the *snowy owls* of the Arctic region visit northern United States each winter, but when food is very scarce thousands come south, sometimes as far as North Carolina.

When a jumping *spider* leaps from a perch, a safety line emerges from its spinnerets which hardens on exposure to the air; if it misses its objective, it can haul itself back to the perch by the line.

Electric plants under the U. S. Department of the Interior during the year ended June 30, 1945, generated nearly 9% of the total American output of electrical energy.

Pre-packaged fresh meats, fruits and vegetables will soon become common in food stores; protection against contamination, loss of weight, bruising and spoilage are promised by pre-packaging.

The *agate stone* logs found in the Petrified Forest in the southwestern United States were tree logs millions of years ago, into whose cell cavities and intercellular spaces silica in solution and other minerals entered.

Nitrogen, the chief growth-producing stimulant in the soil, is responsible for the hardy stem and leaf; with a lack of nitrogen, these characteristics are absent; with too much, the plant runs to foliage and not to fruit.

Spices are obtained from the buds, leaves, seeds, bark, roots and berries of tropical aromatic pungent plants; seasoning herbs are obtained usually from the leaves of temperate-zone annual or perennial plants.

Here is Maj. Pliskin's description of the encounter in which he received 14 bayonet and saber slashes:

"The Nips came down the road. We could see them faintly because of the burning truck. First we heard footsteps, then we could see them. About 15 feet away from me, a stream of fire came at me from the bank at the side of the road. I used my .45, and I guess I got the Nip. There were two more, one in front, one to the right. The one in front opened up, and I emptied my pistol at him. The third man attacked.

"I threw my pistol, probably stunned him, and we started to tussle. Then two more moved up, and began to jab at me with a bayonet as I struggled. The third stab cut my wind-pipe and I fell back. I don't know how long I was unconscious. When I came to, I rolled into the ditch, under the brush, I stuck a handkerchief into my face wound, and lay face down. The Nips came back, blowing up trucks. Five or six were burning, and the grass was afire. Luckily, the area around the truck nearest me didn't catch fire.

"About 1 a.m., our troops came back, and started to drive away the trucks that

could still move. I yelled at them. They refused to come in, thinking I was a Nip and I had to crawl out. A corporal in my outfit recognized me. Our troops took care of me."

Even behind enemy lines, American medical men performed their life-saving duties. A Bronze Star medal went to Lt. Joshua P. Sutherland of Haysi, Va., for his work in the German Stammelager IX B Prisoner of War camp from December, 1944, to April, 1945.

Although entitled to live in officers' quarters after he was captured, Lt. Sutherland voluntarily remained at the enlisted men's camp when he realized that the Nazis did not intend to give sick and dying American enlisted men any medical attention. He was medical officer for some 3,000 men and had to work in filthy and louse-infected rooms.

When the Nazis planned to evacuate the camp's prisoners by forced marches, the doctor convinced them of dire consequences that could follow such a plan. Thus he delayed the proposed move long enough for United States troops to reach the camp and liberate the prisoners.

Science News Letter, February 2, 1946

METEOROLOGY

Typhoons Were Hunted

Data on position, course and violence of storms sent in by American airmen in the Pacific were of immense value in sea and air operations.

► AMERICAN AIRMEN flew out hunting typhoons, which rate as the world's worst weather, during the closing months of the Pacific campaign. When a typhoon was found it was tracked by these determined and daring weather scouts as if it were a hostile force—which indeed it was. Data on position, course and violence of the storm, radioed to island bases and fleets at sea, were of immense value in operations.

The daring work of these weather-chasing flyers, unpublicized during the war, has been made known by the Navy Department.

Three types of four-engined land-based bombers were used in the typhoon reconnaissance. They were all given extra fuel capacity to enable them to make flights of thousand-mile radius. No extra oxygen was carried, and flights were all made at low altitude—frequently hundreds of miles at less than 1,000 feet above the waves. Ditching and

parachuting were out of the question because the water was always impossibly rough. And many of the flights had to be made over waters then dominated by the enemy.

Two kinds of operational flights were regularly made. One was a questing flight over a given course, searching wide areas for possible typhoon conditions. Once a typhoon was found in action, planes followed it regardless of area boundaries, keeping track of it day after day, until it had blown itself out. Half-hourly reports were radioed to the base, giving the plane's position and present weather. A full verbal report was given by the aerological observer upon return to base. All reports received urgent precedence and were rushed by radio to all commands operating near the storm.

Setting up typhoon reconnaissance as a regular Navy aviation job was determined upon as a result of rough experiences of American forces at sea and in

the air in a typhoon southeast of Okinawa on June 5, 1945. Regular flights, begun soon after that date, were continued until Nov. 15. In all, 345 such typhoon reconnaissance flights were made.

Weather research as well as weather scouting will become part of the flyer's job beginning in March, when Army and Navy air forces, under the scientific direction of the U. S. Weather Bureau, will fly remote-controlled, pilotless planes into the hearts of the worst thunderstorms they can find, to learn more about these storms, rated about worst of weather hazards that aircraft have to encounter in temperate regions.

The research will be conducted at the huge air installation of the Army Air Force at Orlando, Fla., and at the Naval Air Station at Banana River in the same state. The robot planes will carry instruments to record all that happens to them in their trouble-seeking flights, and they will be watched and controlled from "laboratory" planes flying at a safe distance from the dangerous thunderheads.

Several other organizations will collaborate, conducting research along special lines. Among them will be the National Advisory Committee for Aeronautics, the Soaring Society of America, the Massachusetts Institute of Technology, the University of Chicago and the University of New Mexico.

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CHEMISTRY

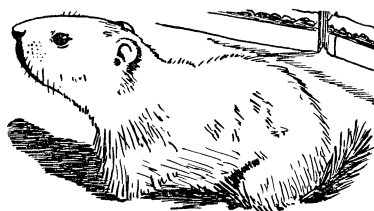
Vitaminized Fertilizer From Pulp-Mill Waste

► **WEALTH** from waste, always a fascinating topic in the annals of American industry, finds a new exponent in a New York inventor, Eric W. Eweson, who has been granted U. S. patent 2,392,811 on a fertilizer made by culturing masses of yeast cells in sulfite liquor, a most objectionable effluent from woodpulp and paper mills.

To prevent development of too much alcohol, Mr. Eweson bubbles quantities of air through the sulfite liquor while the yeast cells feed on the wood sugars dissolved in it, and on the mineral salts which are introduced. After the yeast has reached maximum growth, the mass is dried and sacked, ready for use.

The inventor claims that his fertilizer contains vitamins and still-living yeast cells, the excess of nutrient salts not used by the yeasts, and the lignin, the latter serving as a valuable soil conditioner.

Science News Letter, February 2, 1946



Deputy Forecaster

► **THE GROUNDHOG**, whose shadow-gazing on Candlemas Day (Feb. 2) is supposed to determine the character of the weather for the ensuing six weeks, serves in this country as deputy for the European hedgehog, which was really the original object of the quaint superstition. Early settlers from western Europe, finding no hedgehogs here, picked out the next likeliest animal, which happened to be the groundhog, or as he is also known, the woodchuck.

Actually, the groundhog isn't at all a good substitute for the hedgehog. Zoologically he is not at all closely related, for he is a rodent, whereas the hedgehog is an insectivore, belonging to the same group as moles and shrews. The two animals do not even look much alike: the hedgehog is considerably smaller, and has a back-armor of spines like a porcupine, except that they are only an inch long.

The groundhog would be a most unwilling deputy for the hedgehog if he could be conscious of the dubious honor that has been thrust upon him, for he is a hearty sleeper and hates to get up so early in the year. The hibernating period of the groundhog, over most of his range, runs well into March; St. Patrick's Day would be a much more appropriate feast than Candlemas, to set for his first tentative emergence from winter quarters. The hedgehog, in the much milder winters of western Europe, and especially of the British isles, sleeps lightly and may be seen rummaging around in the underbrush on almost any warm day in winter, like some of our own squirrels.

There is a European animal that is a very close cousin of our American groundhog; it is known as the marmot, which is the more dignified common name of the groundhog as well. It is

also the scientific name; the full zoological title of the common groundhog of the eastern United States is *Marmota monax*. A Western marmot, that lives amid the tumbled rocks of the mountains instead of in the woods, is appropriately known as rockchuck instead of woodchuck.

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ENGINEERING

Gas Turbines to Give Much More Power

► **WAR-BORN** gas turbine engines can be used in future transport planes and will give nearly half again as much power with the same engine-weight as prewar reciprocating engines, declared R. P. Kroon, Westinghouse engineer, at a meeting of the Institute of Aeronautical Sciences in Washington, D. C. Or, he continued, use of such engines can save approximately 25% of installed engine weight and permit greater fuel capacity for long-range flights, or greater payloads on shorter trips.

These economic advantages, he pointed out, will be achieved through the compactness of the gas turbine, the small diameter and low frontal area of which enable a great amount of power to be packed into a small space with relatively light weight.

"Gas turbine engines," he said, "whether equipped with a propeller drive or depending upon a jet for power, can easily be installed in the wing of a large airliner with a considerable reduction in air resistance as compared with a regular reciprocating engine."

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A blind species of *salamander* is found almost exclusively in Missouri caves.

Like acids, the enzyme *invertin* found in many plants and yeasts changes cane sugar into a mixture of glucose and levulose.

by
W. H. GEORGE

THE SCIENTIST IN ACTION

A SCIENTIFIC STUDY OF HIS METHODS

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