



Winter Usefulness

BIRDS, we are apt to take for granted without thinking particularly about it, are especially active and useful to us in summer. There is no doubt there are more of them then, searching trees and bushes for caterpillars, swooping on flying insects in the air.

Yet a really pretty defensible case can be put up for the greater usefulness, per individual, of winter birds. Their population in woods and fields is smaller than in summer, but by the same token the number of hibernating larval and adult insects and other pests is smaller, so that every cocoon destroyed counts a lot more. In the summer a spate of birds feasts on a spate of insects, which replaces itself as fast as it is destroyed.

Winter birds have to make a sharper search in their more scantily-stocked larders, so they are more apt to make a good clean-up of twigs, bark crevices, and anywhere else they find edible tidbits asleep. The same is true for the vegetarian species: they take a larger percentage of the total available weed seeds than do the summer birds, which have plenty of vegetable food.

Especially valuable to man are the winter activities of predatory birds, particularly owls. These feed largely, some-

times almost entirely, on mice and other small rodents. And their winter attacks come at just the time when next year's breeding stock is at its minimum, so that every additional mouse swooped off the moonlit snow means a couple of score fewer mice next harvest-time.

Hawks, too, deserve better than they receive from the shotguns of indiscriminating humans. To very many persons, any hawk is ipso facto a "chicken hawk." But it would be much more accurate to refer to most of them as rabbit hawks, or even mouse hawks,

especially in winter. Even the despised crow takes occasional toll of rodent life.

While the owls and hawks ask nothing of man in winter, except that he restrain his too-ready trigger finger, it is a most wholesome thought to befriend the smaller birds. When storms are severe and snow is deep, hunting for cocoons and caterpillars is not good and starvation threatens. Then is the time when a piece of suet nailed to a limb, or grain and crumbs placed in a feeding tray, will keep some of your best friends in business.

Science News Letter, February 19, 1938

CHEMISTRY

Chemistry, Research Built Quarter of U. S. Industry

ALMOST a fourth of all industry in the United States is chemical—\$10,492,753,000 out of the \$45,759,763,000 produced industrially in a year.

Dollars tell the same story as a look around us at the multitude of things that we use everyday in our complex lives.

Chemical products serve the fundamental human needs of food, clothing, shelter, health, transportation and security. Chemistry takes raw materials from air, farm, forest, mine and sea and makes dyes and organic chemicals, heavy chemicals, drugs and pharmaceuticals, explosives and electrochemicals. The so-called "process" industries convert raw materials into ceramics and glass, coke, fertilizers, leather, lime, and cement, manufactured gas, medicines and cosmetics, oils and fats, paint and varnish, paper and pulp, petroleum, rayon and plastics, rubber, soap, sugar, and textiles. Such a list runs the gamut of material desires and uses.

"Broadly speaking, chemical industry is a great factory that takes the raw materials of nature and by means of chemical processes converts them into useful products to serve our human needs." That is the definition concocted by the editors of Chemical and Metallurgical Engineering, the technical journal, who have just compiled the facts and figures of this inclusive, gigantic industry.

Research has made chemistry. And chemical industries continue research to tune of \$20,000,000 annually spent by chemical manufacturers and several times that amount by the process industries.

Research has lowered prices: "Before research one pound of iodine cost \$4.50,

after research \$1.30; one ampule of salvarsan before research cost \$3.50 a dose, after research 20 cents a dose."

Research has improved products: "In 1910 an automobile tire costing \$50 produced 5,000 miles; in 1936 a tire costing \$15 will give 20,000 miles; the estimated annual savings to American motorists due to research, \$3,002,580,000."

Research has created new industries: "The production of synthetic resins in 1934 was over 100 million pounds, as compared with around 8 million pounds in 1924."

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DENTISTRY

New Dental Filling Hardens Like Concrete

A NEW dental filling that works like the concrete used for building underwater structures in that it requires the presence of moisture in order to harden, has been developed in Germany.

Saliva is a hardening agent for the new cement, which is colorless and, it is claimed, does not injure the pulp or the nerve of the tooth. The saliva causes no further change in the cement once it has hardened.

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● RADIO

Feb. 24, 4:00 p. m., E.S.T.

NEWS ABOUT HELIUM—R. A. Cattell of the U. S. Bureau of Mines.

March 3, 4:00 p. m., E.S.T.

INDIAN PICTURE WRITING—Julian Steward of the U. S. National Museum.

In the Science Service series of radio discussions led by Watson Davis, Director, over the Columbia Broadcasting System.

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