

BOTANY

Gas Attacks Hasten Ripening

The ripening of fruits can be speeded up, and sleepy seeds aroused and made to sprout without loss of time, by subjecting them to gas attacks with two of the ingredients of common city gas, ethylene and propylene, according to Prof. R. B. Harvey of the University of Minnesota.

Bananas and honey-dew melons are among the fruits especially benefited by the gas treatment. Measurements of the respiration rate of the bananas under ethylene showed that they breathed four times as fast as they do normally, indicating a general speeding up of life processes.

Other experiments indicated that special properties of some fruits might be improved by gassing. Pineapple juice, for instance, has long been known as an aid to the digestion of proteins, which include such foods as meat and cheese. The juice of pineapples ripened by the ethylene treatment digested casein, the essential protein of cheese, about one and a quarter times as fast as did the juice of untreated pineapples at the same temperature. At the same time it was found that the treated pines developed a higher sugar content.

Since treatment with a gas is less convenient than treatment with a liquid, efforts were made to find solvents for the two useful gaseous chemicals. In this, however, the research has not yet been successful, and trials of liquid compounds in which these gases are chemically combined have also failed, in some cases even poisoning the fruits. Commercial use of the gas ripening processes by fruit dealers, gardeners and similar trades is at present limited to ethylene, for propylene is not yet supplied in quantity by manufacturers.

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AGRICULTURE

Plenteous Potatoes

Talking of potatoes, the world's record crop is reported by R. C. and H. G. Zuckerman of Stockton, California. They planted thirteen acres, 22,000 plants to the acre, and produced 1038 bushels per acre, which was 76 bushels more than the previous record established two years before in this same locality. But the Zuckermans profess disappointment that their yield was not 1,500 bushels and they prophecy that "a few years from now two thousand bushels will be as easy as to obtain a thousand bushels this year."

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HYGIENE—CHEMISTRY

Visions Longer Life

A chemist, Dr. H. P. Cady of the University of Kansas, has looked forward fifty years into the future and this is what he sees:

Longer human life due to spectacular advances in the overlapping fields of organic chemistry, physiological chemistry and medicine.

Manufacture of rubber, oil and other essential industrial materials from chemicals so as to make man partially independent of natural processes and stores of such substances.

Photosynthesis of carbohydrates, such as plants now make, from nitrogen, water and carbon dioxide.

Metallic materials having almost any desired properties.

Transmutation of one element into another with such facility that chemistry students will yawn at demonstrations.

Formation of new theory of constitution of matter to supplant present complex and conflicting theories of atomic structure.

Millions of compounds of carbon where only a few hundred thousand are now known.

Students taking advantage of prolonged life to master all the new knowledge of chemistry.

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PHYSICS

Light Produces Electricity

A piece of the mineral molybdenite, one of the chief sources of the metal molybdenum, used in steel manufacture, may replace the fragile photoelectric cell in some forms of scientific work, according to Dr. W. W. Coblentz of the U. S. Bureau of Standards. He has been studying what he calls the actinoelectric effect of molybdenite, the property that causes it to convert light energy falling on it into electrical energy. Previously he found that pieces of the mineral have closely adjacent spots which generate either positive or negative electricity. The result is that when the whole crystal is exposed to light the positive and negative currents neutralize each other, and very little effect is noted.

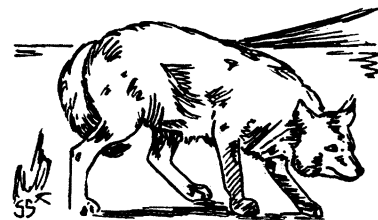
Very recently, however, Dr. Coblentz has found crystals in which all of the sensitive spots give the same kind of electricity, either positive or negative. By using vacuum tube amplifiers, the current may be magnified greatly and the crystal made available as a delicate detector of light.

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BIOLOGY

NATURE RAMBLINGS

By FRANK THONE



Ishmael

Bitterly against the cold, sending a shiver to your very marrow, sounds the howl of the coyote. He is the very voice of the empty plains, of the stony barren foothills of the western mountains. He is the Ishmael among animals; none befriends him, and he is no one's friend. He is not a bold robber like his cousin the wolf, for his meager strength is sufficient only to drag down the young and weak or the old and decrepit. He is therefore contemptuously tolerated: not for him the high compliment of being relentlessly followed by highly skilled government hunters for weeks, which is paid to a "bad Lobo." Traps and poisoned meat, and casual long-range shots from the saddle when he shows himself by day, are all the gates of death that man bothers to open for the poor coyote.

He is, to be sure, sufficiently destructive to lambs and calves to draw the lightning upon his head in the form of offered bounties by the states for his scalp; and in game refuges, such as the antelopes' valley in Yellowstone Park, rangers beset his path with trap lines. During the past year 243 coyotes thus paid with their lives for their presumption in trespassing the pronghorns' pasture, and their pelts piled high in the rangers' cabins.

Yet even so despised a creature as the coyote has his uses. His nose is not so nice that he is above joining the buzzard and the crow at their feasts, and he thus serves as scavenger. Moreover, he is humbly content with mice, ground-squirrels, gophers and "such small deer" as his principal summer diet, so that he also functions as a sort of living vermin-trap.

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Pop bottles left by tourists have caused forest fires in the west.

Oaks are, generally speaking, the most useful of all trees for roadside planting.

Teak wood is valued in shipbuilding because it withstands attacks of marine borers.