

# SCIENCE

VOL. 99

FRIDAY, FEBRUARY 11, 1944

No. 2563

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SCIENCE: A Weekly Journal devoted to the Advancement of Science. Editorial communications should be sent to the editors of SCIENCE, Lancaster, Pa. Published every Friday by

## THE SCIENCE PRESS

Lancaster, Pennsylvania

Annual Subscription, \$6.00

Single Copies, 15 Cts.

SCIENCE is the official organ of the American Association for the Advancement of Science. Information regarding membership in the Association may be secured from the office of the permanent secretary in the Smithsonian Institution Building, Washington 25, D. C.

## THE ROMANCE AND ENGINEERING OF FOOD PRESERVATION<sup>1</sup>

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### THE ELEMENTAL FOOD CYCLE

NATURE has provided a cycle for the conservation of the plant foods of this earth from one generation to another. Man in creating certain processes of civilization has defeated some of the purposes of nature by diverting constituent parts of the plants and animals from this cycle to uses for commercialized civilization.

In this diversion process these essential elements have been directed into modern sewage systems comprised of drainage streams and canals, and hence they have been deposited far from their points of origin. This diversion of the elements from the lands of their origin has slowly impoverished in strategic populated regions the animal-plant cycle established by nature.

<sup>1</sup> Address of the retiring vice-president and chairman of Section M (Engineering), prepared for the New York meeting of the American Association for the Advancement of Science.

It has reduced the effective value of the essential elements where life has elected to live, and this to a critical degree especially in some regions.

It is very significant and fortunate that many of the elements to create food for living organisms are inexhaustible. As an example, carbon, oxygen, nitrogen and hydrogen are found in limitless and bountiful quantities in the air and water. From these elements starch, sugar, fats, fibers and protein are all produced. In other words, these several foods are made from unlimited constituents of air and water, transformed under the influence of the sun by the several botanical and biological processes into edible products. Chemically, each of these products originates from an inexhaustible source of supply.

On the other hand, many of the essential plant food elements that are contained in the soil are exhaustible. Potash, phosphate, calcium, magnesium, sulphur, iron,

# Science

**99 (2563)**

*Science* **99** (2563), 107-132.

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