

fact that ethylene increases the sugar content of the fruits exposed to it.

Experiments are in progress to ascertain the possibilities of ethylene with other fruits such as melons, pineapples, and peaches that have to be picked green to stand shipping to northern countries. Certain varieties of apples and even rhubarb are said to be greatly improved by the treatment.

Since ethylene is simple to administer and comparatively inexpensive Dr. Harvey says that it has distinct commercial possibilities, particularly in the northern states that cannot hope to obtain a naturally ripened product.

WINTER SAP OF EVERGREENS TOO THICK TO BE FROZEN

Why do the leaves of evergreens hang on all winter long, when by rights they should be frozen and drop off? According to researches of Dr. Floyd W. Gail of the University of Idaho, they stick because in winter their sap becomes too thick to freeze.

Dr. Gail gathered leaves from pine trees and from broad-leaved evergreen shrubs once every month through three years, crushed out the sap and tested it for its freezing points. He found that during the summer when the weather is warm and the sap flows freely it is relatively thin and could be frozen easily if there were any frost to freeze it. But as fall comes the starch in the leaves is converted into sugars and oil, changing the sap from a thin and watery fluid into a sort of sirupy emulsion, very difficult to freeze. He found that the greatest density of the sap was reached during late January and February, when the most severe freezing weather occurs. Deciduous trees, that lose their leaves in autumn, show some thickening up of the sap, but apparently the sugars are transferred into the tree before the leaves drop off, for Dr. Gail found that the sap pressed from leaves that had just fallen was easily frozen, whereas sap from leaves not quite ready to fall resisted the effects of considerably lower temperatures.

ANCIENT PLANT REMAINS FOUND IN COAL WASTE

Coal balls, hard, unburnable lumps usually discarded as waste at the mines, are being made to tell new stories of the plant life of America many millions of years ago, when the great deposits of coal were in the making. Dr. A.C. Noe of the University of Chicago has gathered a large collection of these curious objects, from which thin sections are being ground for microscopic examination. Many plants heretofore known only from the prints they left in the mud when they fell and decayed ages ago can now be studied in fine detail.

In the forthcoming issue of the Botanical Gazette, Freda D. Reed of Earlham College, Indiana, tells of the microscopic examination of a single one of these coal balls, which yielded specimens of four different genera of plants. They included a sort of climbing fern now extinct, a plant with some primitive suggestions of the structure of modern evergreens, a relative of the horsetails or scouring-rushes, and what appears to be an ancestral form of the present-day club mosses.
