

Prof. Bronk told his audience. Thus isolated, their structure can be analyzed by new electrical, optical and electron-microscopic methods. The electron microscope gives new vistas into the molecular architecture of the cell. The

electrical states tell of its internal responses to fluctuations in the supply of essential elements such as calcium and phosphorus, and other environmental influences.

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for thermostat setback except in the most severe climates.

This estimate was obtained from tests at the University of Illinois Research Home and reported to the meeting in Cincinnati of the American Society of Heating and Ventilating Engineers by Prof. A. P. Kratz, W. S. Harris and Prof. M. K. Fahnestock.

Approximately a 10% saving in burner operating time was also obtained under test conditions of a 66-degree thermostat setting from 10 p. m. until 5:30 a. m. when the setting was restored to 72 degrees. The heating system in the Research Home, a typical well-built house, was operated with flow control valve and low limit aquastat, maintaining a minimum boiler water temperature of 165 degrees Fahrenheit. Operated without the flow control valve and aquastat, only a slight saving of fuel was effected.

Except for the warming up period in the morning, reduced night temperature has no effect on the household temperature during the day, the researchers point out. Actual cooling of temperature during the night was six degrees or less.

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BOTANY

Seedless Tomatoes

Number One victory vegetable produced in more attractive form by plants fumigated with growth-promoting acid.

► TOMATOES, the Number One victory vegetable, can be induced to produce seedless, more solidly meaty fruits by treating the plants with the fumes of a growth-promoting acid, naphthoxyacetic acid, at or before the time the flowers open. Experiments along these lines, which may have important horticultural applications, were performed in the greenhouses of the great experimental farm of the U. S. Department of Agriculture at Beltsville, Md., by Dr. John W. Mitchell and Muriel R. Whitehead of the Bureau of Plant Industry. (*Botanical Gazette*).

Use of growth-promoting chemicals to induce formation of seedless tomatoes and other fruits had already been reported by other researchers. However, their methods involved the use of sprays, or even direct application of the substances to the flower-parts with brushes or by other hand means. Getting similar results merely by subjecting plants temporarily to self-distributing fumes from a few milligrams of the acid obviously saves a great deal of time and labor in the treatment.

In their experiments, Dr. Mitchell and Miss Whitehead placed a number of tomato plants in a closed chamber, so that the exact concentration of the fumes could be measured. They used 250 milligrams (1/120 troy ounce) of betanaphthoxyacetic acid per thousand cubic feet of room space, evaporating it on a hot glass plate over an electric heater. After exposure to the fumes overnight, the plants were taken back to the greenhouse, where an equal number of untreated plants were placed with them for comparison purposes.

As the flowers opened, both treated and untreated plants were all carefully hand-pollinated. When the tomatoes were mature, they were compared for flavor, vitamins and total mineral content. Except for the fact that the to-

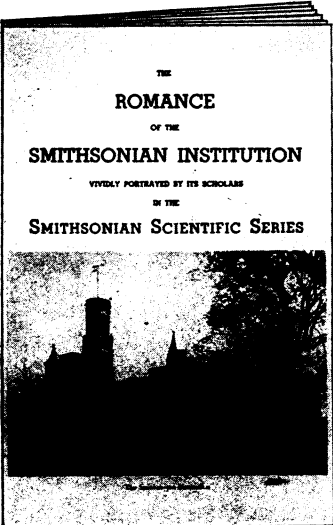
matos from the treated plants were nearly or quite seedless, no difference could be detected between the two lots.

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ENGINEERING

Tenth of Fuel Oil Saved By Thermostat Setback

► HOME OWNERS can save about a tenth of their fuel oil by setting back the thermostat 6 to 10 degrees Fahrenheit at night, probably the practical limit



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