ENTOMOLOGY

NATURE RAMBLINGS

by Frank Thone

Unreliable Prophets

➤ CRRRRRRRREEEE-areeee-areeeeeeeee-ee! The file-edged song sounds through the heat-drowsy summer afternoon. And Cree-eee-aree-areeeeeeee! comes the answer from another tree, and another and another.

"Locusts singing," say the weather-wise-acres, "Only six weeks till frost now."

For inaccuracy, that statement comes close to taking the prize. Call it song if you will; that's a matter of taste, more or less. But the singers are not locusts; they are cicadas, or harvest-flies. Real locusts are big, flying grasshoppers, and these August-afternoon chanters are related to grasshoppers only insofar as they are insects. They belong to an entirely different family, being more closely akin to squash-bugs, giant water-bugs and the like. They are first cousins of the seventeen-year cicada—also often miscalled a locust.

As for their forecast of first frost, that may be set down to heat-weary wishful thinking. Cicadas sound off just as the summer heat reaches its peak, and the prospect of a good solid chill, even six weeks away, seems to give some relief just through thinking of it. However, it's usually considerably more than six weeks till frost, after you hear your first cicada. The first shrilling of this insect was noted in the vicinity of Washington, D. C., this year about the first of July; and anybody who expects frost in the Capital's suburbs by mid-August just doesn't know his Washington summers, that's all.

The seventeen-year cicada has been thrust into an equally false role as a prophet because of a peculiar W-shaped marking in the venation of each wing. Superstitious folk who see this insect at most two or three times in their lives take this to be a portent of immediate war.

The joker here is that while the seventeen-year cicada turns up in any given place only once in that many years, there are seventeen swarms or broods of the species, so that somewhere in the country there is a chance to see those W-marked wings every year. But then, this is an unquiet planet, and there is usually some kind of a fight going on, somewhere. So the cicada's reputation is at least partly salvaged.

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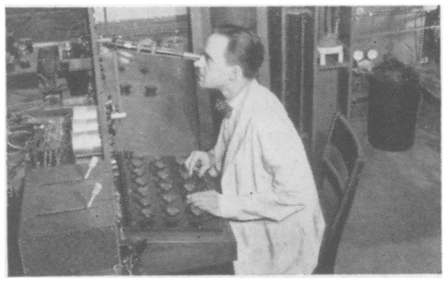

CHEMISTRY

Improve Leather Tanning

➤ IMPROVEMENT in leather tanning with synthetic chemicals in what is known as the dialdehyde-resin process was recently reported by A. H. Winheim, of the Planetary Chemical Company of Creve Coeur, Mo., and E. E. Doherty of Bona Allen, Inc., Buford, Ga. The process was first announced about a year ago.

In this process, the prepared hide is first treated with a compound of the dialdehyde type, such as the chemical, glyoxal, which is used in making resins, and then with resin-forming agents such as urea or phenol (carbolic acid), or with combinations of these substances and formaldehyde. The rigidity which might result from the process is prevented by the addition of a checking agent.

Investigations recently made eliminate some of the commercial "bugs" in the process, according to Messrs. Winheim and Doherty. Among improvements are the more satisfactory method of acidification of the resin-forming monomers, and the simpler control of flexibility of the leather even when cheap urea-aldehyde resins are employed.

In describing the process, the discoverers stated that the hides are tanned with glyoxal or other dialdehydes, or certain bifunctional compounds. One of the aldehyde groups attaches itself chemically to the protein in the hide, the other remaining free to react with certain resin-forming compounds under suitable conditions.

The proposed and most likely commercially-desirable resin treatment, they continued, involves the use of urea-formaldehyde mixtures or prepolymers slightly deficient in formaldehyde. Employment of a ratio of one-to-five of monoalkyl amine to urea yields leathers of greatly improved flexibility without loss of the highly desired "fullness" and "firmness" sought by the tanner.

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GENERAL SCIENCE

Suggest Way To Improve Clearance Procedures

➤ TWO WAYS in which scientists can help "raise the level of the confidential reports on which clearance decisions are based" were offered.

Scientists who are questioned about neighbors, friends or colleagues should state that they are willing to testify if necessary, and they should prepare a signed, written statement of the information for the investigating agency.

The suggestions were made in a letter to the magazine, PHYSICS TODAY (August), by a Princeton astronomer, Dr. Lyman Spitzer, Jr., as chairman of the Scientists' Committee on Loyalty Problems.

Dr. Spitzer explained that information gathered in loyalty and security clearance investigations is collected in a confidential dossier. The sources of the information are often anonymous or known to only a few officials, he points out.

"It is obvious that these unacknowledgeable statements can cause serious misunderstanding which cannot easily be clarified, especially in cases where the clearance status meets with difficulties," the letter warns.

By following the suggestions, scientists can help this situation, it is proposed.

Members of the Committee which has been studying loyalty and security clearance procedures include Dr. Albert Einstein.

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