

HORTICULTURE

Guayule Produces Rubber Only When Its Life is Hard

THE GUAYULE plant, source of America's new home-grown rubber, will not stand too much coddling. Certain luxuries of cultivation, principally ample irrigation, cause it to lie down on the job.

Dr. David Spence, technical director in charge of guayule culture near Salinas, Cal., described to the American Chemical Society here his recent experiences in making desert bushes grow rubber. The first really substantial California crop, due this winter, promises to give the rubber industry something to think about.

Guayule, an unimposing, scrubby bush of the sunflower family, seems to have been cast out by Nature to fight for a living with cacti, creosote bushes and the like in the arid desert wilds of Mexico. Peons earn a scant living by uprooting the plant, transporting it by donkey to the coast, and selling it to rubber producers.

American rubber interests have long been fearful of an emergency involving embargo on tropical rubber. Under the leadership of Dr. Spence, they have chosen California as the most likely state in which to develop the domestic product.

If the guayule plant is forced to endure a drouth of several months, it will produce a multitude of fine droplets of rubber all through its larger stems and roots, particularly near the cambium or new-wood layers. As high as 18 per cent. of the total weight of the bush is actual rubber in the new high-bred strains of the plant being propagated at Salinas. If, however, the plant be given a continuous supply of moisture in the manner common to ordinary agricultural crops, it just forgets to grow rubber. Life is apparently too soft. The plant simply vegetates and makes an immense amount of worthless brush.

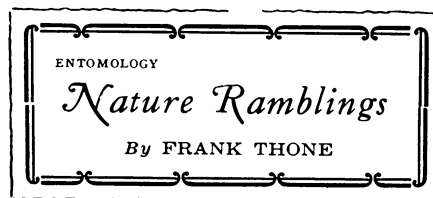
The central valleys of California afford a climate suited to this situation. No rains of any significance occur between May and October, and comparatively little in April and November.

Selection Is Difficult

Scores of inferior varieties of this plant have been rejected. An almost uncanny scientific intuition has been developed in picking good rubber-producing strains, based largely on appearances of nursery stock and seed. It is not easy to select winning stocks as with potatoes and corn, since the desirable plant has to be destroyed before its merits are mathematically proven, and before it produces seed.

California guayule rubber was subjected to recent tests in auto tire formulas in a local plant. Results indicate that it is nearly equal to Hevea or tropical rubber in tensile strength, elasticity, etc. Chemically it seems to be identical with the ordinary caoutchouc of commerce. The Salinas experiments promise acreage yields close to those of the tropics. Closer plantings may run the yields even higher than those of Hevea. Just at present the low market offers no promise of profit in guayule rubber, and commercial prospects are very much those of the future.

Science News Letter, November 15, 1930



Dormant Butterflies

WE COMMONLY think of insects as utterly helpless in the face of winter, unless like the much over-rated ant, they take refuge under ground or in some other tight shelter. The improvident grasshopper is doomed to destruction, and we are apt to think of the frivolous butterfly as even less able to face the rigors of cold weather.

Yet there are a few of these "flying flowers" that regularly live through the cold season in a state of suspended animation, like that of a hibernating ground squirrel or frog, only probably even deeper than theirs. The common mourning-cloak butterfly, the beautiful dark-winged insect that haunts the shadows of the woodlands, is among these. She takes refuge under a projecting limb of a tree when cold weather comes, and calmly goes to sleep there. When thaws come, she thaws out also, and flits about a little, in search of food. Oozing sap or soggy frozen-and-thawed apples on the ground will supply a hasty pick-up meal before she goes back to roost again.

What happens to such hibernating insects is still pretty much of a riddle of animal physiology. There is no question that they are frozen; frozen as solid as a bird that dies of the cold. Yet they do not die. Their circulation must be stopped, or nearly stopped, and they certainly do not breathe. The secret seems to lie in the tissues of the body themselves; somehow they are able for long periods to dispense with the food brought by the blood plasm, and with the oxygen from breathed air. But how?

Science News Letter, November 15, 1930

The world's first metal-base highway was recently completed at Springfield, Ill.

March's Thesaurus Dictionary

Finds the word you have forgotten, and *defines* it. See full description in full page advertisement, issue of October 11, 1930.

Write for "Three Men and a Book," an entertaining little booklet showing the advantage of March.

Historical Publishing Co.
Dept. SCX, 1334 Cherry St., Phila., Pa.

KEEP ABREAST IN YOUR SUBJECT EARN CREDIT TOWARD A DEGREE

While teaching, use the
HOME STUDY

courses for *Teachers* in Rural, Primary, Grade and High Schools—or for *Supervisors* and *Principals*, which the University gives *by correspondence*. 450 courses in 45 subjects yield credit toward either a Bachelor's degree or Teaching Certificate.

Write for booklet giving full information.

The University of Chicago
577 Ellis Hall Chicago