



Leafy Umbrellas

**P**LANTS hold their leaves over their roots like umbrellas, thereby preventing much rain that might otherwise reach them from falling all the way to the ground. To that extent plants are their own enemies.

That trees do this sort of thing is something we have all experienced. Who has not sought shelter under the thick canopy of a big tree during a shower, even though the weather-wise counsel against it because of lightning risk?

But even humbler plants, the herbs of the prairies and meadows, also hold up leaf-umbrellas against these possible benefits to their roots. Dr. O. R. Clark of the University of Nebraska has made elaborate measurements of rain-interception by leaves of prairie herbs.

Dr. Clark simulated conditions of nature as nearly as possible. He laid out squares of prairie vegetation of known area ("quadrats"). One-fifth of each quadrat had the plants growing in shallow pans buried to the edges, so that the amount of water reaching the soil

could be accurately measured. Water was supplied from sprinkler bottles.

The proportion of water intercepted by the leaves varied greatly with the intensity of the artificial showers. A gentle one, of one-eighth inch in 30 minutes, could get only 26 per cent. of its water through a covering of buffalo grass to the soil beneath. A harder rain, a quarter-inch in 30 minutes, sent 69 per cent. of its moisture through to the

ground. A downpour of half an inch in half an hour got 83 per cent. through.

These interceptions of rain are practically all net loss to the soil, and of course also to the thirsty roots that are in the soil. The totals per acre are enormous. For instance, Dr. Clark calculates that wheat, intercepting 52 per cent of half an inch in half an hour, causes a loss per acre of over 29 tons of water.

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## BIOCHEMISTRY

## Washing Removes Vitamin D Raw Materials From Skin

**Y**OU PLAY a few sets of tennis, or toss a medicine ball, or take some other kind of vigorous exercise in the sunshine. You come in to the shower feeling full of pep and vitamins. You rub yourself down briskly with a rough towel, and feel even better. But you've lost a good part of the vitamin you have just been acquiring!

For now it appears that the shower and rubdown that are orthodox parts of the American exercise and health ritual actually remove from the skin some of the stuff that vitamin D is made of. This is the conclusion of experiments at the Institutum Divi Thomae in Cincinnati, performed by Agnes C. Helmer and Rev. Cornelius H. Jansen.

In the experiments, groups of students, after exercising, had their bodies above the waist washed with clear water, which was all carefully saved and evaporated down. The terry cloths with which the students dried themselves were also saved. The residue from the washing and the terry cloths was ex-

tracted with ether, and the material thus obtained subjected to ultraviolet irradiation and fed to rats afflicted with rickets.

The defective bones of the rats healed up, showing that the athletes' "washings" had contained the precursor or raw material for vitamin D, which was then converted into the vitamin by the ultraviolet treatment.

In a second experiment the students were first irradiated with ultraviolet and the extracts then made in a similar manner. The results with rats proved that the washing had removed vitamin D itself from the boys' skins.

In their conclusions the experimenters state: "There is definite evidence that the secretions from the skin contain precursors of vitamin D, which after irradiation are due to be reabsorbed by the body, and the removal of which tends to produce a dearth of the vitamin unless it be supplied in some other form."

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## FORESTRY

## Duke University to Have Graduate Forestry School

**A** GRADUATE school of forestry, the first of its kind in the South and the third in the United States, will be open for students next fall at Duke University. The other two are at Harvard and Yale universities.

No undergraduate courses will be given in the new school, and only candidates presenting bachelor's degrees, in suitable pre-forestry subjects, will be accepted. The course will lead to the degree Master of Forestry.

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