BOTANY

NATURE RAMBLINGS

by Frank Thone

Spring Flowers Are Short

SPRING flowers are typically low-growing, short-stemmed. The ones you think of first—violets, buttercups, hepaticas, bloodroots, wood anemones, spring beauties—all lift their pretty heads only a few inches above the ground. Even those that rate as tall—Solomon's seal, Dutchman's breeches, columbine, wild geranium, Jack-in-the-pulpit — do well if they can develop stems one and one-half or two feet long.

Out in the open, which we are used to thinking of as typically the home of tall flowers, the early spring flowers are short, as exampled by Pasque flower, Pussy's-toes, star-grass and bluets.

Contrast this with the tall and towering stems of the summer and early autumn plants, that range from waist-high to half again the height of a tall man—things like the goldenrods and wild asters, wild sunflowers, rosinweeds, eupatoriums, ironweed and blue vervain.

It is interesting to speculate on possible reasons for this shift from delicate humility to towering pride.

One fairly obvious factor, of course, is lack of time for spring flowers to become tall. They blossom from a week to a couple of months after the last snow has melted, and if they are to do that they can't spend much time on growing long stems. Quickies must be shorties.

In the woods at least, spring flowers must necessarily be quickies. In the earliest weeks of spring, even in the South, trees are still bare, or at least have such small leaves that a considerable amount of sunlight filters through. After the leafy canopy has closed conditions are not so favorable for flowering, down on the forest floor. A census of the flowers of woodlands will show a considerable majority of early blossomers.

Low stature for spring flowers of the grasslands would seem to be at least partly conditioned by evaporation and the buffeting of the wind. Pasque flowers, with their hairy covering on leaf, stem and petal alike, and their habit of nestling tight down among the dry grasses of yesteryear, are well adapted for the windy world into which they are born. If a six-foot sunflower or cupweed could try conclusions with the gusts of late March and early April it might not survive so well.

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BIOLOGY

Special Microscope Mount Shows Growth of Cells

LIVING cells in the tips of grass roots can be watched as they grow and divide, in a simple new arrangement for placing them under the lens of a microscope, devised in the botanical laboratory of Prof. Edmund W. Sinnott of Columbia University.

The method consists in using two slips of moist transparent paper, between which very small grass seeds are placed and allowed to germinate. They produce roots so slender and transparent that the microscope discloses all details of their growth, hitherto discernible only by indirect, slow and more expensive methods, and on dead tissues.

Among the points already found out about cells of grass roots:

1. New cell walls stay where they are formed, never migrating to new positions.

2. Such new walls are not always flat. They are sometimes curved, following the physical laws that govern the formation of bubbles.

3. Cells usually divide into equal halves, but sometimes the new cells are unequal in size. Then the smaller one, nearest the tip of the root, produces an extension known as root hair.

4. Cells stay in the same relative positions; they do not slip or slide past each other.

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AGRICULTURE

New Sweet Corn Variety Resistant To Ear Worms

GOOD news for lovers of corn-on-the-cob, in the Southern states, anyway. A new variety of sweet corn developed by U. S. Department of Agriculture plant breeders at the Puerto Rico Experiment Station is resistant to corn earworm.

Coming as it does from the crossing of tropical corn varieties, the new sweet corn is not suitable for planting in the North, where it "runs to stalk" and does not mature early enough. In the South, however, it grows very satisfactorily. Further breeding now in progress aims to produce a variety suitable for growing in the north.

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AGRICULTURE

Soil Moisture Measured By Electric Current

MOISTURE in the soil, an important factor in crop production, can be measured quickly and easily by a new method, invented by George J. Bouyoucos and A. H. Mick of the Michigan Agricultural Experiment Station. (*Science,* March 17)

It depends on the fact that moisture in a buried block of gypsum varies along with the moisture in the soil, while the electrical conductivity of the block in turn varies with its moisture. Accordingly, all they need to do is bury a gypsum block of standard dimensions, with a pair of wires attached to it, leading to a source of current and a current-measuring instrument.

The new method is said to be particularly accurate in its indication of the low moisture-point at which plants begin to wilt.

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