



Woodland Sunshine

► **SPRING FLOWERS** in the woods are not altogether woodland flowers. We commonly think of the woods as shady places, well covered by the interlacing twigs and overlapping leaves of the tree canopy. This they are, from late spring until the leaves drop off in autumn; but during late April and through much of May, in middle and northern latitudes,

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DOUBLEDAY

the trees are either unfoliated or at most small-leaved during the time the violets, buttercups, fawn-lilies, anemonellas, spring-beauties and other typically vernal flowers are in bloom.

During this time the forest is quite a different place from what it will be when the green canopy closes. The trees' branches do cast a thin shade, and to some extent break the full sweep of the winds; but even so, there is much less difference between conditions in the woods and in the open than there will be later.

Both the quantity and the quality of the light under the unleaved trees are different. Total sunlight is several times more intense, which means among other things that the direct warming effect on soil is much greater, with correspondingly greater stimulus of perennial plants to grow and flower. There is a higher proportion of rays of shorter wavelength, which are almost wholly cut off by the leaves, after these have had time to reach full development.

The lack of a leafy canopy also makes a considerable difference in the type of rainfall received by the forest floor. In spring, the raindrops fall through the branches to the ground, with very little interception. After the trees have spread their leafy umbrellas, light showers are intercepted partly or even altogether, and evaporated back into the air without moistening the soil at all. Only heavier rains penetrate the canopy and reach the soil.

Of very great importance, perhaps of the greatest importance, is the difference in evaporation rates between the early spring woods and the same woods later in the season. The same early sunshine warmth that encourages the flowers also speeds up transpiration losses through their leaves, and direct evaporation of water from the soil. Added to this, and boosting the effect significantly, is the freer sweep of the spring winds that carry off the water vapor thus produced. Actual instrumental measurements of evaporation rates show little difference between the forest and the open at first; but after the canopy has closed the evaporation rate in the woods drops to half that in the open, or even less.

Science News Letter, April 27, 1946

The adoption of *standard time* in the United States can be credited largely to the railroads; in 1883 more than 60 different local times used by the different railroads were resolved into the four standard times now used.

ELECTRONICS

Clearer Television Pictures Predicted

► **THREE TIMES** greater clarity and brilliance of images on a television screen are reported to result from a new coating applied inside the face of a cathode ray tube developed in Schenectady, N. Y.

An aluminum "skin" or sheath serves as a sieve to electrons but is impenetrable to light, according to General Electric Co. engineers who designed the tube. This special coating is 1,500 times thinner than a sheet of paper, but has a shiny surface reflecting light.

Coated on fluorescent powder just inside the face of the tube, the "skin" permits a beam of electrons shot from the rear of the tube to penetrate it. The reflected light is believed to be three times greater than previously possible with this type of tube.

The thin coating of aluminum is applied by evaporating it so that it condenses on a plastic surface on the fluorescent powder in the tube. The plastic is removed during the heating treatment of the tube leaving the thin coat of aluminum.

Science News Letter, April 27, 1946

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