

## Some Thoughts on Popularizing Botany

Louis F. Gumbart

*Mucumb, Illinois*

We have been in an era of "Nature Study" for some thirty years, but there are few high school students asking for botany. Fifty years ago the influence of Asa Gray on American thought was still potent and many high school students constructed and cherished "Herbariums." Why the change? We have studied biology and with a microscope and we have failed to create a desire to know more of plant structure as we can see it every day with our own eyes. Not in the least belittling the study of biology, why not work out a small well illustrated book of supplementary reading for seventh and eighth grades that will help stimulate a desire for plant study with a manual, by high-school time?

Such a book could start with outlines of leaves, green perhaps, showing the leaves of some of our commonest trees and shrubs, with special attention to the sharp points on black oak and round lobes on white oak types, and the freak forms of sassafras and mulberry. Second, with root forms, bulb, corm, rhizome, turnip, potato and trees, with peanuts as the freak.

Third, with seeds, corn and wheat as endogen examples; then beans, peanuts, other nuts and apple and orange seeds for exogens, not illustrated, but with the suggestion that the reader put some dirt in a small box, plant the seeds, marking the places, water well and set in sunny window and keep moist—then watch them grow, noting particularly the way the two types of seed come up. Calling attention to the fact that this difference makes the fundamental division in plant life.

We are now ready for some family studies, and, to be attractive and thought and question provoking, each should have its characteristic illustration. Some of the flowers should be shown with parts separated and with the office of bees, butterflies and moths mentioned.

The Lily family with flowers in threes, onion and lily side by side.

The Rose family, flowers in fives, single and double, to show man's possibilities—there may be another Burbank among the readers. By all means stress the value of this family in food economy as well as beauty, berries, apples, peaches, pears, etc. The Mustard family, with flowers in fours like a cross, radishes, turnips, cabbage as well as some well-known flowers. The Pulse family, with flowers like a butterfly, includes beans, peas, peanuts, the clovers, etc. The Convolvulus family, flower a twisted bud opening into a trumpet, morning glory, sweet potato, dodder and bindweed.

Solanum; the true potato family, flower a five pointed star, some very bad members of which are close relatives of our good friends the so-called Irish potato, the tomato and egg plant; belladonna, henbane, nightshade and jimson (Jamestown weed), not forgetting tobacco and cayenne pepper.

Then the Mint family, with its square stems, opposite leaves and tubular flowers. A great many so-called weeds are in it, but peppermint, spearmint, catnip, horehound and sage are all well-known to most of us as quite useful. The Composite family, with dandelions, daisies and sunflowers.

For the benefit of city children a page or two illustrating ears of corn and heads of wheat, oats, rye, barley, rice and sugar cane should be quite interesting as well as instructive. Particularly so when their relationship to the common grasses is shown.

Such a book would be quite a help toward pleasant auxiliary work for both teachers and pupils, and who knows what the stimulus might be, for some backward or bright boy or girl, toward a lot of clean fun and possible improvement in fruit, flower and forest.