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Back Yard Botanizing

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My home in Bronxville does not occupy a large plot of ground by any means, but it has provided me with an extraordinary amount of botanizing during the past seven years. Scores of uninvited guests, some of them welcome, many distinctly unwelcome, have come in and made themselves at home. Some of them have been weeded out and destroyed, some have disappeared naturally, others are still there and defy all my efforts to dislodge them.

Whence do they come? Many from the little vestiges of original forest vegetation which still are plenty in and around Bronxville; some merely from my neighbors; some in packing or earth or seeds from distant sources; many from places not only unknown but even unconjectured. The point is that they come, some of them every year, some of them once only. One never knows in the spring what the coming summer will produce and every season brings a fresh surprise. Every strange seedling is allowed to grow and is carefully watched until it is large enough to identify. That often means waiting until they bloom, and that in turn may lead to a permanent occupant of the garden where we had wished for a mere temporary one.

In 1928 we were away during the entire growing season and had no idea of what new visitors we may have received. The next year was accordingly of exceptional interest, since we had the immigrants of two years to become acquainted with.

The systematic botanist likes to classify, and I shall arrange these visitors to my garden in three groups, mentioning many of them by name and discussing some of the more interesting ones in more detail.

First, we have the ordinary weeds of cultivated grounds. These plants doubtless migrate into my garden every year from my neighbors in all directions, or from street-sides and vacant lots, and for that matter, from my place to my neighbors as well. We are all very generous with our weeds. If by careful work I exterminate one species completely, I know it will be back next year anyway. There is no hope for their permanent banishment. All we can do is try to keep their numbers down to a minimum.

These common weeds we shall have to classify further into those of flower-beds, hoed ground, and the bare soil under shrubbery, and those of the lawn. The two groups are quite distinct in species.

In the beds and shrubbery the commonest weeds are the sorrel (*Oxalis cymosa*), the chickweed, galinsoga, nimble Will (*Muhlenbergia diffusa*), and wandering Jew, all of which tend to spread into the shadier edges of the lawn. Others which are present every year but do not constitute a serious menace are shepherd's-purse, foxtail, carpet weed, and purslane.

Galinsoga is an interesting weed, and I believe it would repay some careful experimentation. Seeds which have passed the winter refuse to germinate until the ground is thoroughly warmed in late spring and then grow to a fair size before blooming. Seeds produced during the summer germinate immediately, even until after frost. As the days become shorter in late summer and early fall, so does the life cycle of the plant, until in October it may set seed when only an inch high. Is this an effect of temperature or is it due to the shorter period of daylight? And if the summer seeds germinate so quickly, why do not all of the seeds germinate the same year, the later ones taking advantage of the warm days of Indian summer? Obviously, if they did, we would not have galinsoga with us much longer. I commend the plant to my colleagues at the Boyce Thompson Institute for study.

Numerous other weeds are sporadic in appearance, easily eradicated, and not always developing in successive years. Such are the fleabanes (*Erigeron ramosus*, *annuus*, and *canadensis*), smartweed, cinquefoil (*Potentilla monspeliensis*), red sorrel, Canadian blue grass, pepper grass, and wild carrot. I have seen single plants only of Spanish needle (*Bidens vulgata*,) tumbleweed, ground ivy, and burdock. A single plant of another cin-

quefoil (*Potentilla recta*) was preserved for six years and showed no tendency to spread. A huge Mexican tea (*Chenopodium ambrosioides*) was in full bloom on my return to the place in the late summer of 1925; it has not reappeared. During the first year of my occupation lamb's quarter was so abundant that it gave us a fine dish of greens, but it has scarcely been seen since then. Single plants of Deptford pink and winter cress appeared in 1929, a night-flowering catchfly in 1926, an unnamed *Cyperus* in 1927.

While weeds are a nuisance in cultivated grounds, they can at least be reduced by the hoe, but in a lawn they are a pest. Excluding white clover, the presence of which is often desired, I have noted nearly thirty kinds of weeds in my limited expanse of lawn. A few of these are dangerous and ruin the lawn if strenuous measures are not used against them. These are the two species of plantain, *Plantago Rugelii* and *P. major*, the dandelion, the mouse-ear chickweed, the crab-grass, and the self-heal. Of these only the last two need any comment.

Our native self-heal is usually an erect plant, sometimes three feet high, with flower-heads an inch long. The form which grows in lawns is a prostrate creeper with flower-heads seldom more than half an inch long. It has often been said that its prostrate habit is due to the lawn mower which keeps the leaders clipped off; this is not the case. Young prostrate plants from seed have been carefully watched and allowed to grow unchecked, but still retained the creeping form and small heads. In the lawn it forms small but always increasing patches which kill the grass completely. The stems are fragile so that the plants have to be pulled up piecemeal. Fragments of it are scattered by the mower or rake and take root, and seed reproduction is effective also. In 1922 my lawn contained one fair-sized patch; now it has a dozen small ones scattered widely across it.

Crab-grass does not germinate until late summer. Under ordinary conditions it makes fair-sized plants before blooming, which can be pulled up easily, although care must be used to take every bit of them out. A single fragment left in the soil will bloom as a dwarf and furnish seeds for next year. Last summer was so dry that crab-grass did not germinate at its usual time, and when rains finally came the season was so late that it had to hurry its bloom. As a result it never was a serious weed, but

it appeared by hundreds instead of by tens and bloomed at a very small size. I noted plants only two centimeters long from the base of the stem to the top of the spike. It was impossible to get them all and I predict an epidemic of crab-grass for 1930.

Wild garlic is unsightly in the spring, when one spares the lawn mower to give the crocus a chance, but my few plants are easily kept in check and each year sees less of it. Orchard grass is another persistent pest and new clumps appear as fast as I dig the old ones out. Timothy and red-top bother but little. Knot-grass and spurge (*Euphorbia maculata*) grow in a few isolated patches. Bitter Dock appeared in 1928 and tried to bloom in 1929. The latter year also brought black medick for the first time. Four species of rosette plants, the buttercup *Ranunculus acris*), ox-eye daisy, mullein, and moth mullein appeared with regularity each year, although two of them are biennial and none is allowed to seed. Two creeping species of *Veronica* were first noted in 1929, and must wait for flowers and fruits before they can be identified.

My second class is far more interesting than the first. It includes the native woodland plants of the vicinity, which are trying to reclaim what they once possessed. Some of them have to be treated as weeds and ruthlessly exterminated, but most of them are welcomed and encouraged to grow, provided they have selected a reasonable place.

Of young trees, I have had black oak, hickory, sugar maple, silver maple, tulip tree, black cherry, and sassafras,only the last one being kept. Two kinds of goldenrod (*Solidago neglecta* and *speciosa*), heart-leaved aster, and two or three white asters appear in numbers every year and a few plants of each are kept for autumn bloom. Blue violets invade my flower beds by the hundred and must be hoed out as soon as they have finished blooming. One plant of groundnut has bloomed for eight season and its relative, the hog peanut, appeared under some shrubs in 1927. Venus' looking-glass came up under a fir tree in 1924; it does not like the dressing of granulated peat but is still trying to live. Indian tobacco (*Lobelia inflata*) bloomed for the first time in 1925, and every year since then we have had numerous plants. Certainly some of them must hide away in a corner and ripen seeds, for I have not been able to exterminate it. Black-eyed Susan has appeared and bloomed in three places but re-

fuses to stay longer. Three-seeded mercury, wild lettuce, clearweed, poke, small-flowered crowfoot, five-finger, and loosestrife have each appeared once, and the last alone was allowed to remain. It succumbed to the drought of 1929. A dozen or more plants of honewort came up at the edge of the rhododendrons in 1929. A tiny plant of bladder fern settled in a crevice in an oak tree, a foot above the ground, in 1827. It leads a precarious existence there but came through last summer's drought alive. Merchantia probably arrived during the wet summer of 1928. Last summer several small patches sent up reproductive branches growing close to the shade of my boundary fence.

All of these are growing, or trying to grow, under shrubs or trees and in the beds. Out in the lawn conditions are much less favorable for woodland plants, yet several have shosen to try it. *Festuca octoflora* mingles with the bluegrass in several places. Star grass and avens have each appeared once. A few plants of blue-eyed grass and spring beauty bloom every spring. The sensitive fern has burrowed under my fence from a patch at the side of the street. *Carex laxiflora* is pretty well established in a shady corner and does not seem to mind the lawn mower. Robin's plantain is almost a weed, so that I dig out some scores of the basal rosettes every summer. Yarrow has been seen once or twice. My prize possession in this class, however, is *Selaginella apus*, of which at least a dozen plants grow on a moist shaded slope. They probably arrived in 1928, since they were well established in 1929.

Our third class includes cultivated plants that come up spontaneously about the place. Seedlings of snowberry, Japanese barberry, and horse chestnut are common, and come from parent plants on the ground. A blackberry vine appears each year, though I have been trying to kill it since 1922. Wild plants of cosmos bloom nearly every year among my iris. Seedling locusts are abundant, coming from a parent tree just over my line fence. Single plants have been noted of snow on the mountain, Japanese honeysuckle, raspberry, and apple. A large gaura came in with some pansies and flowered in my window box. Two seedlings of trumpet creeper germinated together in 1929 and are now trying to climb up my fence.

Finally, and most remarkable of all:

A certain small bed of lily of the valley offered nothing un-

usual in 1922, 1923, or 1924. In 1924 a small plant with linear leaves came up in the middle of it, and was suspected to be a lily. In 1926 it was larger and the two beautiful flowers showed it to be *Lilium auratum*! Seven flowers were developed in 1927, five in 1928, and five on two stems in 1929, when the bulbs were nearly destroyed by beetles and were removed to another place. How *Lilium auratum* ever transported itself unassisted into my garden is a mystery to me. My readers may explain it for themselves, if they can.

I have not tried to mention all the plants which grow, or have grown, naturally on my place; the total is more than a hundred and fifty species. Nor can I account for the absence of some other common things. Why has not such a common weed as the giant ragweed, abundant on a vacant lot a hundred yards away, not come in? Why doesn't the jewel weed settle down by my sensitive fern, since the two so often live together? And were the dozen seedling jack-in-the-pulpits which came up under my weigela actual immigrants, or merely the progeny of my own plant, ten feet away down the hill?

As for the ragweed and jewel weed, I have every confidence that I shall get them both in due time. In fact, I expect to add at least ten species to my list every year. Some of these days I may even find a bloodroot growing among my violets and a lady-slipper beneath the pines.

New York Botanical Garden