

BOTANY

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Too often, a weed is a weed and nothing more. But weeds represent as many botanical families as do cultivated plants.

I shall begin with the Pink family, not only because it furnishes many of our worst weeds but also because the flower structure is so simple. Botanists place this family low among the dicotyledons. The symmetrical flowers show lack of complexity. The small, undivided, or entire leaves indicate the same.

The family is not difficult to identify. Examination of such a plant as a chickweed or a catchfly would help more than any written description. Five petals notched at the apex would put one on the track at once. Even where the petals are not notched, if one finds a plant having the calyx free from the ovary, five distinct petals, not more than ten stamens, attached to the receptacle, and two to five stigmas, it would be wise to turn to this family in your botanical Key. There, one will find details sufficient to remove all doubt.

Common representatives of the Pink family are corn cockle, bladder campion; two or three species of Catchfly; several species of chickweed, mouse-ear chickweed, and stitchwort; sandwort, sand-spurrey and corn-spurrey. Among garden representatives are Sweet William, Catchfly, Bouncing Bet, Pinks and Carnations.

A capital exercise for children would be the collecting of the various species of each genus. Three or four children could be assigned the task of getting a complete collection of this family while other children collect another family. Notes on the habit and habitat of every plant collected will furnish excellent topics for descriptive composition. The fact too, that most of the plants we talk about came from Europe will give one point of contact between botany and geography. Some of them were brought here as garden flowers; some because the first settlers believed they needed medicine, and that many plants had medicinal value; but most of them came as stow-a-ways, hidden among seed grain and flower-seeds. In the same way, plants are still being scattered in all parts of the world. In our own provinces, new weeds appear every year. This is because we import seeds instead of growing them. Many too, are scattered along the railway from hay used to feed live stock on the way from Ontario. What other ways can the pupils think of?

Another common family is the *Ranunculaceae* [Look up the derivation of that big word. This family shows some advance over the Pinks in the evolutionary development of the plant kingdom. Though in general the structure is simple, this is a family of experimenters. Genera, and even species differ so much that one would scarcely believe all could belong to one family. Who would think, for example, that a buttercup, a columbine, and a larkspur should be grouped?

The attempts to enlist the services of insects have led to most of these changes. After all, the differences are largely in appearance rather than in arrangement of parts.

A typical representative of this family is the buttercup. Notice that the numerous stamens and carpels are separate from each other and from other parts of the flowers. This is distinctive. The reader will remember that in *Rosaceae* the petals and stamens were attached to the calyx. Not so, however, in *Ranunculaceae*.

In many genera of this family, the sepals are colored and showy, resembling petals. They really do the work of petals. The latter, in such case, are modified into nectar-bearing bodies; or they may be entirely lacking.

The Goldthread, Monk's-hood and Larkspur are good illustrations of showy sepals and inconspicuous petals. In the Meadow-rue, there are no petals. Here, even the sepals are short lived. This plant is worth careful study for more reasons than one. Examine a dozen different specimens. Are all alike?

The common wild species of *Ranunculaceae* will include clematis, goldthread, meadow-rue, hepatica, anemone, baneberry, marsh-marigold, and eight or ten species of crowfoot and buttercup. Among the cultivated members of the family are Columbine, Clematis, Larkspur, Monk's-hood and Peony. Hellebore, so commonly used to poison insect pests, belongs here.

A third family, available at all times, is *Cruciferae*. It is easily identified by the four petals whose upper half spreads to form a cross. To make identification certain, however, look at the six stamens, and notice that two are shorter than the other four. This arrangement was doubtless an experiment on the part of Nature for better pollination.

Determination of species is easier in late summer; for the differences in pods and seeds are used more than any other characteristic.