

BOTANY.

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No family of plants claims our attention more strongly than the *leguminosae*. Other plants do not square their accounts with the soil until after they are dead. This family, however, owes no board bills. In fact, it not only pays its own way, but leaves an amount on the credit side to help the less fortunate plants that may follow after it.

Everyone, doubtless, knows how clovers and allied plants enrich the soil by allowing bacteria to live in small lumps on their roots. If any reader be not familiar with this fact, he should read in some botanical text-book about "nitrification" and "root-tubercles."

Since this is a family of benefactors, we cannot become too well acquainted with it. Different members show much variation, and include herbs, shrubs and trees. To learn the flower structure most commonly met, however, I suggest a study of the sweet pea. Notice the peculiar irregular corolla, with the one larger petal covering the others in the bud, and spreading back when in full bloom. Particularly, however, should we notice the stamens. There are ten; but the filaments of nine of them grow together, forming a sheath, and one is separate. This occurs in no other family.

There are peculiarities about the leaves in many species. In the peas and vetches, for example, some of the leaflets have become tendrils, and to make up for the loss in green surface, the stipules have become large and leaf-like.

School children should be familiar with the clovers of the farm. The red, white and alsike are everywhere. The crimson clover is becoming more common. Alfafa, which is closely related to the clovers is, also, being grown experimentally. In the west, it is one of the most important fodder crops. The yellow or hop clover is a common weed. Similar to clover, too, is Melilot, or Sweet Clover.

The vetches, or wild peas, are common in hay-fields; and are often sown with oats. Two or three species can be found without trouble. I find the hairy vetch, called "moose-pea," in many localities. The Beach Pea will be familiar to those living on the sea-shore. The ground-nut or wild bean is common in our river valleys. It likes to climb among the branches of low willow shrubs. The Canadian tick-trefoil often grows with it.

It is, of course, needless to mention the peas and

beans of our gardens as belonging to this family. It also furnishes a few ornamental trees and shrubs, among which are the Locust (Acacia) Honey Locust, Siberian Pea Tree, Red Bud, Genista and Wistaria. The Genista is a common greenhouse plant, which will bloom in the house during the winter, and again out-doors in the summer. The Wistaria is an attractive climber; but is not perfectly adapted to our winters. It is, however, worth trying.

Children will be interested to know that licorice comes from the root of a plant belonging to this family.

The next family worthy of attention is the *Umbelleferae*. It can be identified almost at a glance by the compound umbels or umbrella-like clusters of flowers. Each individual flower is small. Apparently it has no calyx. The calyx really forms an extra coat to the ovary; and has, therefore, practically lost its identity. Each flower has five stamens. Notice where they are attached. Study carefully such a plant as the Caraway to learn the family characteristics.

In our vegetable gardens we can find four members of this family, viz.— carrot, parsnip, parsley, and celery. There are also a wild carrot and a wild parsnip, both of which are troublesome weeds. The former frequently grows in hayfields in August, after the hay crop is harvested. Its flower-cluster is somewhat the shape of a bird's nest. It is also called Queen Anne's Lace. Caraway, as everyone knows, also prefers a hayfield.

Along river banks the Cow Parsnip is abundant. Its leaves are as large as rhubarb leaves, and the flower cluster is nearly one foot in diameter. The plant grows five or six feet high.

In ponds two very common plants are the water parsnip and the water hemlock. The poison hemlock, which Socrates had to drink, was probably of this group.

In moist ravines in spring one finds the Sweet Cicely fairly common. I have found it in the same locality and blooming with Dutchman's Breeches, which is not of this family.

To make a complete collection of either of the foregoing families will take the student into all kinds of locations— wet and dry; sunshine and shade; cultivated and uncultivated ground. Incidentally he will learn much besides being able to identify the plants named here; for, of course, he will not close his eyes to plants of other families.