

To such small leaves, which are very common on the peduncles of flower-clusters, the name *bract* is given, and if the bracts form a whorl of three or more, the whole is generally called an *involucre*. There is, then, no green calyx in *Hepatica*. But we have the whorl of colored leaves corresponding to the petals of the Buttercup. The question then arises—shall we call these colored leaves sepals or petals? As they are the *outer* leaves of the flowers, that would be a reason for calling them sepals, but they are certainly more like ordinary petals than sepals. However, botanists agree to be guided by the first consideration, and call them sepals, and they agree to look upon the *Hepatica* and all such flowers as have only one of the two outer whorls as being *without a corolla*. This being understood there is no further trouble in the examination of this flower. The colored calyx will be found to be polysepalous; the stamens are numerous and separate (polyandrous); the carpels are numerous and separate, the pistil being therefore apocarpous; and each carpel contains one ovule, just as in Buttercup. Note, also, that in this flower, as in the Buttercup, all the parts are attached directly to the receptacle.

The Wallflower blossom may next be examined. Here we have no difficulty in finding the calyx, but there are only four sepals. The corolla consists of four petals. The stamens are six in number, and you will readily discover that two of them are different in length from the other four. The pistil is all in one piece, but if you select an enlarged one from a withered flower, and cut it across with a sharp knife, you will see that it consists of *two cells*. We have, in fact, in this pistil two carpels grown together, a state of things quite unlike what we found in Buttercup and *Hepatica*, where the carpels were all separate. We shall often find instances

of this growing together, or *cohesion*, as it is called, of the parts of floral whorls, sometimes sepals cohering, sometimes petals, and sometimes stamens. We shall even find the parts of one whorl growing upon another whorl, such as the petals growing on the calyx, or the stamens growing on the corolla. To distinguish this union of different whorls from the union of parts of the same whorl, we shall speak of the former as *adhesion*, reserving the term *cohesion* exclusively for the latter.

You will not fail to notice that the two cells of the ovary in Wallflower contain a considerable number of seeds.

It will be a good plan for you, after studying the Wallflower blossom, to compare its structure with that of Water-Cress, or Shepherd's Purse, or the common yellow Mustard of the fields. In all these cases you will find so evident a similarity in the form of the flower that you will be prepared to hear that they all belong to the same natural group of plants.

We shall now examine the flower of Geranium, reserving the Dandelion for another occasion. The calyx is of five sepals, as in Buttercup. The corolla, also, is of five separate petals, these being alternate with the sepals. The stamens have peculiarities not observed in the other specimens. First notice that the filaments cohere to form a tube at the base. They are in consequence said to be *monadelphous*, that is, of *one brotherhood*. Then you will observe that there are ten of these filaments, every other one being shorter, so that we have two sets of five each. It is not likely that you will find anthers on all ten of the stamens; perhaps only on six or seven. The pistil is made up of five united carpels (*syncarpous*), and there are clearly five stigmas. These unite below into a slender column above the ovary; this column is known as the *style*.