

The caulescent violets show but a slight variation, which is restricted to the mere serration or crenulation of the leaf margin. But the most conspicuous variation is to be observed in *V. pedata*, if we compare the leaves of the mature plant with those of the rootshoots. Some of these types of leaves are figured on our plate (Plate V, figs. 13-16), and we notice the great divergence between the normal leaf (fig. 13) and the smaller one (fig. 14), which was taken from a one year old specimen. In the rootshoots (figs. 15-16) the leaves show a tendency to becoming almost entire, and one would hardly have suspected them to belong to this species, if it were not for the fact that we succeeded in preventing them from breaking off when the mother-plant was lifted.

Considering these few but well marked cases of leaf-variation in *Viola*, we might suppose that several of the recently described new species, in which the outline of the leaf constitutes an important part of the diagnosis, may be referred to some single type with ability to adapt itself to the surroundings, and to exhibit a certain amount of variation. And we must remember that besides varying in leaf-outline these same species do, also, vary in respect to the pubescence, which is still more influenced by the conditions of the surroundings, character of the soil, light and shade, etc., and it can, of course, only be ascertained through prolonged study in the field whether such plants are sufficiently constant in their mode of growth so as to be considered as valid species.

THE RHIZOME.

Few organs are as constant in their structure as those which constitute the rhizome, the under-ground stem-portion, with its leaves and roots; yet it is very seldom that recent authors pay much attention to this part of the plant, when they describe new species; in regard to *Viola* it is generally passed by in silence. The following types of rhizome are observable in the Canadian perennial species of *Viola*:

- A. Rhizome vertical, monopodial, leaves all basal with axillary flowers:

V. pedata.