

sugar beet ; and, because of the particular attention which it is receiving just now in many parts of our Province, we shall study it with a view to finding out its life-story.

Beginning with the seed, we find that what is commonly called the seed is in reality a pod. With the aid of a sharp knife, let us open a number of these pods, by cutting them straight across the centre. We now notice that the pod is composed of a rough irregular shell. Inside the shell are chambers, separated from one another by woody partitions. In some of these pods, we find but one chamber ; in others, there are as many as four or five of these cavities. Inside each chamber, we find the true seed of the beet. The seed, you will notice, is kidney-shaped. It



Fig. 80. The beet pod (on the left). The beet pod opened, showing the chambers within. The true seed of the beet (on the right).

is about the size of a turnip seed, and is enclosed within a dark brown wrapper. When this wrapper is removed, we discover the embryo, or infant plant, curved around a mealy substance. This mealy substance is the *endosperm*, and is the food upon which the young plant feeds during the germinating, or infant, stage. The embryo is the essential and most important part of the seed. It has root, stem, and leaves, although these organs are often as undeveloped in form as they are in size.

Boys and girls will do well to observe carefully the various stages in the act of germination. For this purpose, a dozen pods or more are sown in a soil kept duly warm and moist, and one or two pods are uncovered and dissected at successive intervals of, say, 12 hours, until the process is complete. In this way, it is easy for us to trace all the visible changes which occur as the embryo starts to grow.

We thus notice that the seed first absorbs a large amount of moisture. As a result, it swells and becomes soft. The embryo enlarges, and

shortly the shell bursts, and a sprout makes its appearance. In the figure given below, you will notice three sprouts making their exit from a single pod. Notice also that these sprouts have the same general appearance. Each sprout is called a radicle. In time, the radicle becomes the true root.



Fig. 81. A beet pod showing three sprouting seeds (on the right). The radicle making its exit from the seed coat (on the left).

In the process of germination, the young plant grows at first wholly at the expense of the seed. It may, therefore, be compared to the suckling animal, which, when newly born, is unable to provide its own nourishment, and consequently depends