

That part of the potato plant below the surface and growing within the soil is called the root, but it consists of four parts, radicles, fibres, stolons, and tubers. The radicles, however, are the only true roots, for they alone perform the function of taking up the nourishment from the soil, necessary to the development of tops, leaves, and tubers.

Four main radicles spring from the stem, and these send off numerous lateral fibres, and these again sub-lateral ones at the ends of which are numerous spongioles or absorbent mouths, and as the plant increases in growth, new filaments and spongioles appear.

The necessity of keeping the potato plant in vigorous growth by good culture will appear when we see that this process is continually going on during the growing season and does not stop until nature has exhausted her powers by a completion of the products the plant was destined to form. We may also learn, from a close study of the roots of the potato, that the number of the absorbents, is so great and they are so actively employed in seeking water and inorganic matter for the sustenance of the plant, and that the web-like filaments on which they exist are so delicate and easily broken, and are many of them so minute as not to be discerned by the unassisted eye, and yet they consist of a porous mass of tubes of the most fragile description. An obvious and practical inference from their extent and widely spread diffusion is, that any method of planting or after culture which represses or curtails their growth, in a like proportion, impairs the health, decreases the vigour, and diminishes the produce of the plant.

The stolons spring alternately from the root stalk, and in opposite directions from each other. At their commencement, they grow upwards for a few inches at an angle 18 deg. or 20 deg. with the stem. They are simply prolongations or off shoots of the organism of the main roots, and act as ducts conveying the secretions of the plant to the tubers, serving also to

place the tubers in a drier position than the roots.

They live only till the plant has completed its communication of its secretions to the tubers: for whenever it ceases to elaborate matter to convey through them, their function is accomplished, and they dry and shrivel.

Here again, we see how necessary it is to do all we can to keep the crop healthy and vigorous; for, if the powers of the elaboration of the sustaining secretions are checked, the stolons, especially in damp seasons or situations, are liable to decay, and, in consequence, to occasion disease and death in the tubers.

The tubers which are the only valuable part of the potato are masses of cellular and fibrous tissue, protected by external coverings, and containing germs of future plants, they are formed by expansion of the vessels of the stolons, and fed by communications through them from the stem. They have no external means of obtaining nourishment, and when they are ripe, that is when the skin is set or hardened, they are quite impervious to water. They comprise bark or outside covering, their cuticle, tubular vessels, and germ feeding channels.

The bulk of the tuber consists of cells, which are its storehouses. Besides these are channels in which the germs are located: these channels are filled with starch and granules which are the food of the germs while germinating.

These germs are situated, one at each eye of the tuber, and could they be carefully cut out, each one would exhibit a miniature potato plant, perfect in all its parts. When active vitality or germination commences, these germs elongate themselves, advance their bud or apex through the eye, and appear at the exterior of the tuber.

The eyes or germs of the potato tuber do not all push at once, but ripen and germinate in a series or succession. The eyes nearest the extremity are generally the earliest, and those nearest which the tuber was attached to the stolons the