

Root Cap

The **root cap** is a type of tissue at the tip of a plant root. It is also called calyptra. Root caps contain statocytes which are involved in gravity perception in plants. If the cap is carefully removed the root will grow randomly. The root cap protects the growing tip in plants.^[1] It secretes mucilage to ease the movement of the root through soil, and may also be involved in communication with the soil microbiota.

The purpose of the root cap is to enable downward growth of the root, with the root cap covering the sensitive tissue in the root. Also, the root cap enables geoperception or gravitropism. This allows the plant to grow downwards (with gravity) or upwards (against gravity).

The root cap is absent in some parasitic plants and some aquatic plants, in which a sac-like structure called the *root pocket* may form instead.

The extreme tip of the root is usually protected by a cap or thimble-shaped body called the root-cap. When the root pushes its way through the soil, the tender and soft tip runs the risk of being injured due to friction with soil particles.

The root-cap, serving as a buffer, protects the tip from that danger. Further, the cap secretes slimy mucilaginous matters which facilitate the course of the root through the soil. The root-cap is absent in many aquatic plants. In screw pine root-caps are multiple.

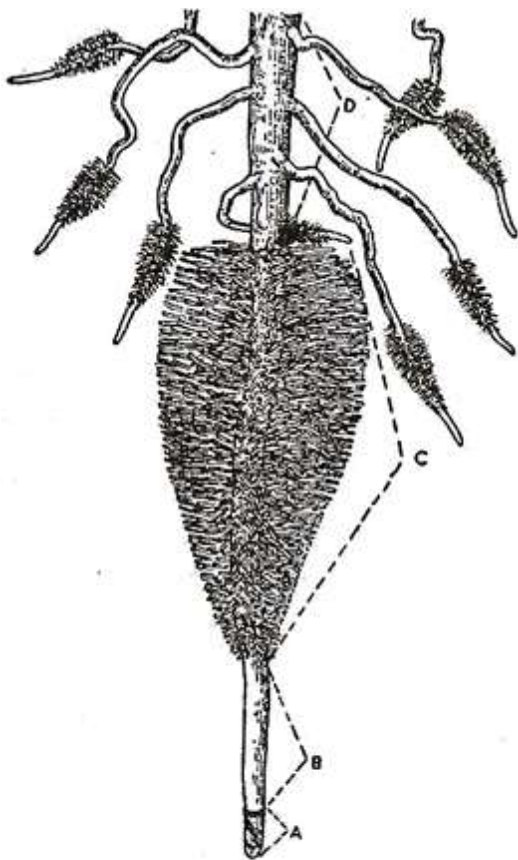


Fig. 32. Regions of a root.
A—root cap region; B—region of active growth and elongation; C—root-hair region; D—permanent region.



Fig. 33. Multiple root-cap of screw pine.