

Topic: Anomalous Secondary
Growth in Dracaena
B.Sc. Botany (Hons.) II
Paper: IV Group: A

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Dracaena is a typical example of anomalous secondary growth in monocots. Typically, secondary thickening is absent in monocots. Therefore, secondary thickening itself is an anomaly as Dracaena is a monocot.

The following features of the stem-

- Epidermis single layered remains covered with thick cuticle.
- Hypodermis is sclerenchymatous.
- Numerous closed, collateral vascular bundles scattered in the parenchymatous ground tissue.
- Xylem is endarch.

Anomalous structure:

Dracaena shows anomalous secondary growth. The cambium appears in the parenchyma outside the outermost vascular bundles. This region in which the cambium appears in sometimes as cortex and sometimes as pericycle.

- The newly formed cambium cuts towards outside and inside both.
- The tissue developed on the inner side of the cambium is usually differentiated into vascular bundles remain separated from each other by lignified tissue, sometimes this tissue remain unlignified and thin walled.
- The cells formed on the outer side of the cambium make parenchyma
- The palm stem do not increase in girth because of any cambial activity but tis thickening is the result of gradual increase in size of the cells and of intercellular spaces and sometimes of the proliferation of fibre tissues.
- This is the type of long continuing primary growth.
- The activity of the primary thickening meristem resembles with secondary growth found in certain monocotyledons such as Dracaena.
- A cambium ring is formed due to meristematic activity of some cells lying immediately outside the bundles.

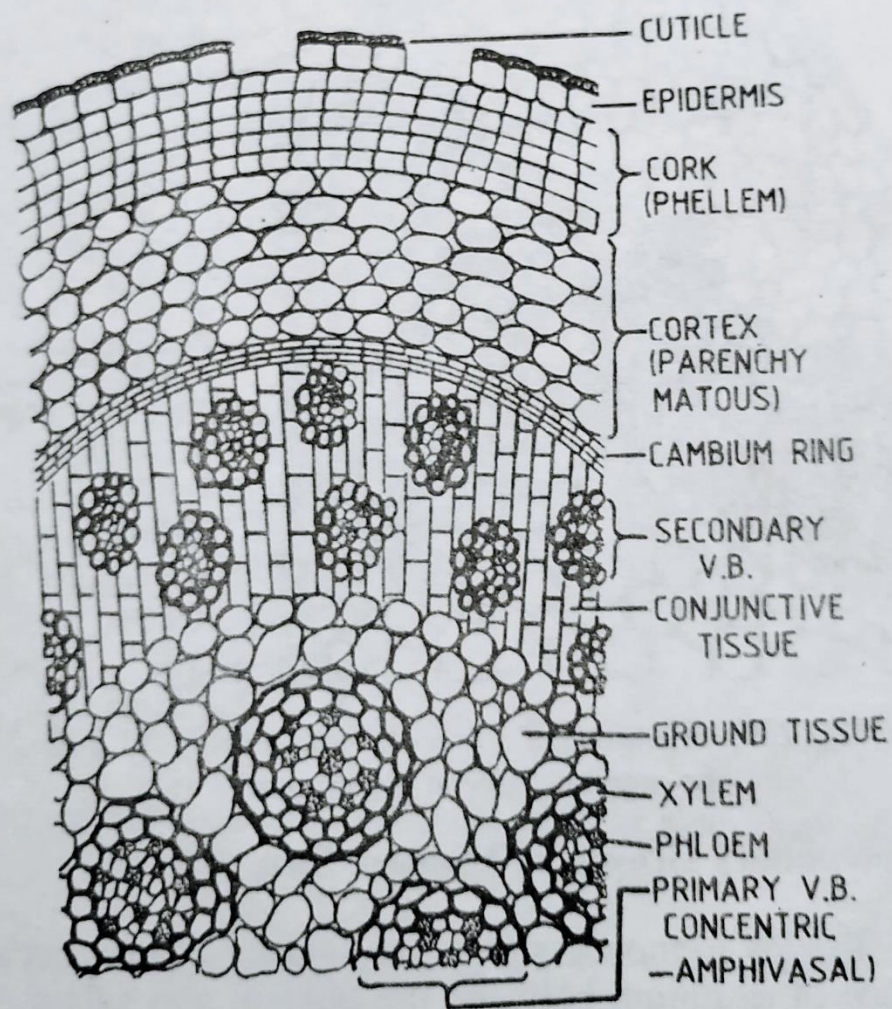


Fig. *Dracaena* : T.S. through a sector of stem showing anomalous secondary structures both in the stelar and extrastelar regions.

- The cambium cells are unusual in function, which go on producing secondary vascular tissues and conjunctive parenchyma internally and little simple parenchyma externally.
- The secondary vascular bundles formed are oval and amphivasal and are smaller than the primary bundles.
- They embedded in the conjunctive tissue whose cells are radially arranged.
- In the extrastelar region is formed because of the repeated periclinal divisions of the cortical cells.
- The cork cells, formed without the appearance of cork cambium are called storied cork.