

7.4.4. Cinnamon

Since cinnamon is an inner bark, it lacks cork and primary cortex, indicated in figure 7.19. However, patches of primary cortex may be observed in rare cases. **Sclerenchymatous pericycle** is present. The stelar portion of the cork contains **phloem**, **phloem fibres**, **biseriate medullary rays**, and **secretory cavities** with volatile oil and mucilage. In cortical parenchyma and medullary rays, starch grains are found, and in the cells of parenchyma calcium oxalate crystals have been observed.

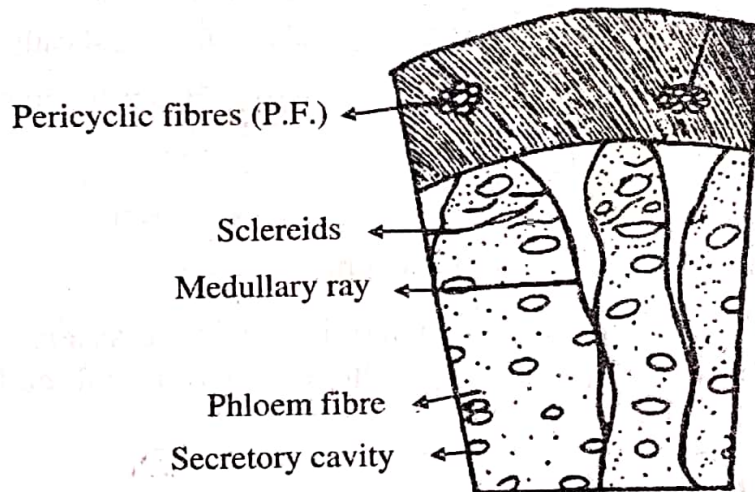


Figure 7.19: T.S. of Cinnamon Bark

7.4.5. Cinchona

The transverse section of cinchona bark is shown in the figure 7.20:

- 1) **Periderm:** It is comprised of the following parts:
 - i) **Cork:** It is comprised of several layers of thin-walled, flat, polygonal cells with reddish brown content, impregnated with suberin.

- ii) **Phellogen:** It is comprised of 2-3 layers of thin-walled cells without any cellular content.
 - iii) **Pheloderm:** It is comprised of 6-8 layers of thin-walled rectangular cells without any cellular content.
 - iv) **Cortex:** It is comprised of several layers of thin-walled tangentially elongated cells containing reddish brown matter.
 - a) **Calcium Oxalate Crystals:** 2-6 μ long and microsphenoidal crystals.
 - b) **Starch Grains:** 6-10 μ in diameter and rounded.
- 2) **Secondary Phloem:** It is comprised of the following parts:
- i) **Sieve Tubes:** The compact cells are 200 μ long and 15-20 μ wide, and have narrow companion cells; most of the sieve tubes are compressed and collapsed.
 - ii) **Fibres:** Numerous, large, fusiform, lignified phloem fibres, have striated walls, conspicuous tubular or funnel-shaped pits, mostly isolated, and sometimes present in groups of 2-3 fibres.
 - iii) **Phloem Parenchyma:** Thin, dark reddish brown walls.
 - iv) **Medullary Rays:** 1-3 seriate, extended up to cortex cells, radially elongated, and contain starch grains.

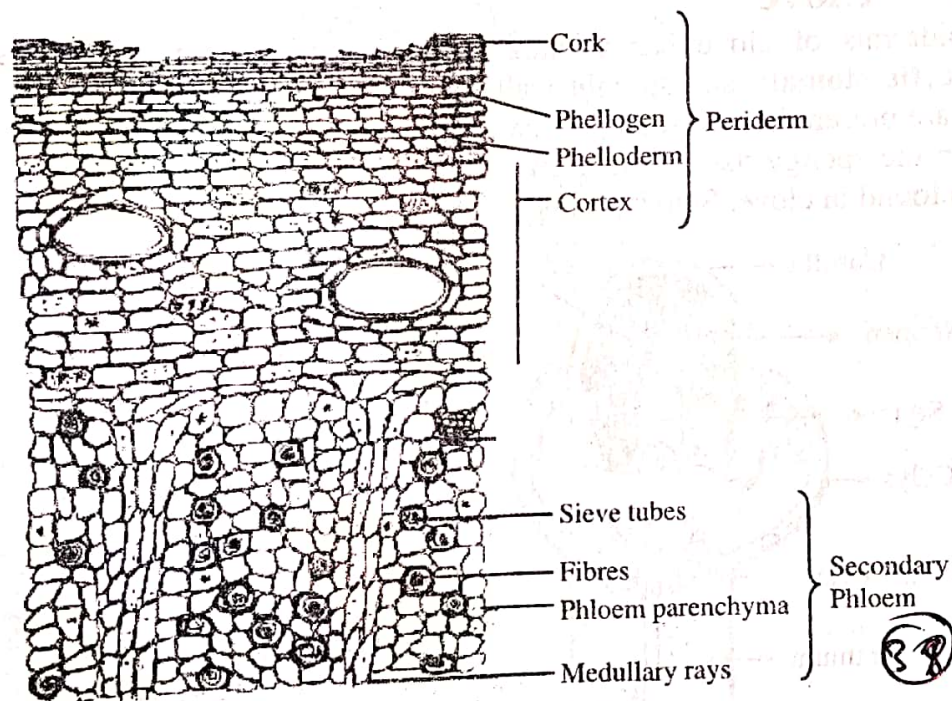


Figure 7.20: T.S. of Cinchona Bark