

Experiment No.10:

Aim: To study the anatomical details of wood in T.S., T.L.S. and R.L.S

Material required: Wood log of *Mangifera indica L.*

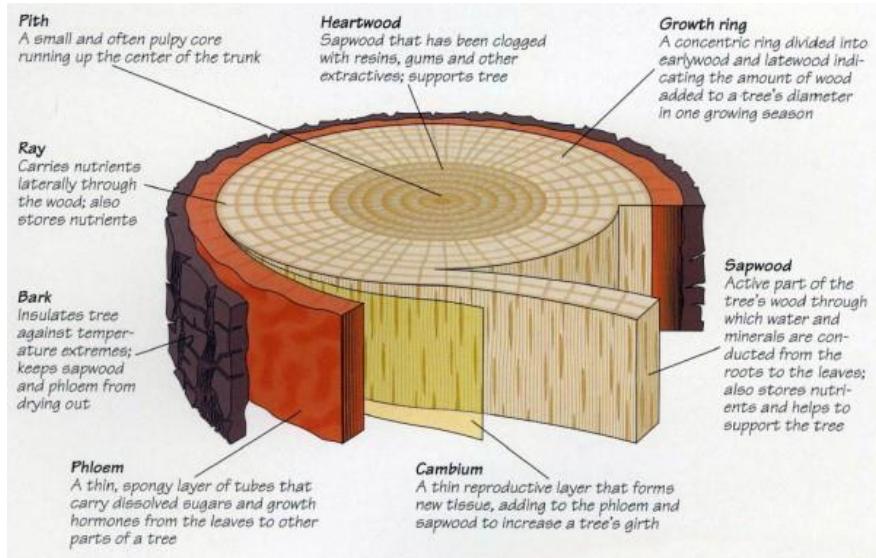


Fig. 1. Wood showing different tissues

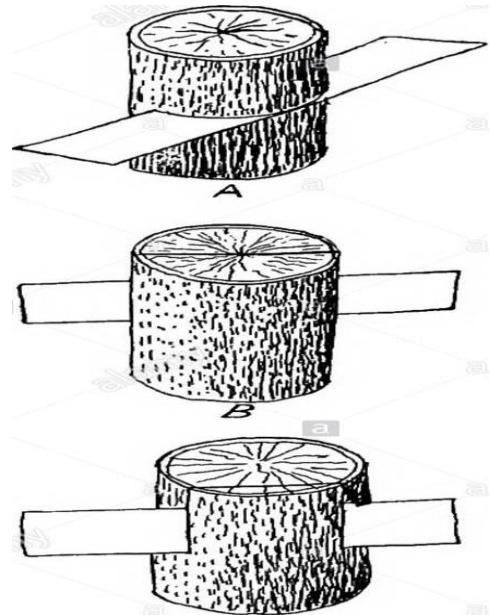


Fig. 2. Wood showing types of sections

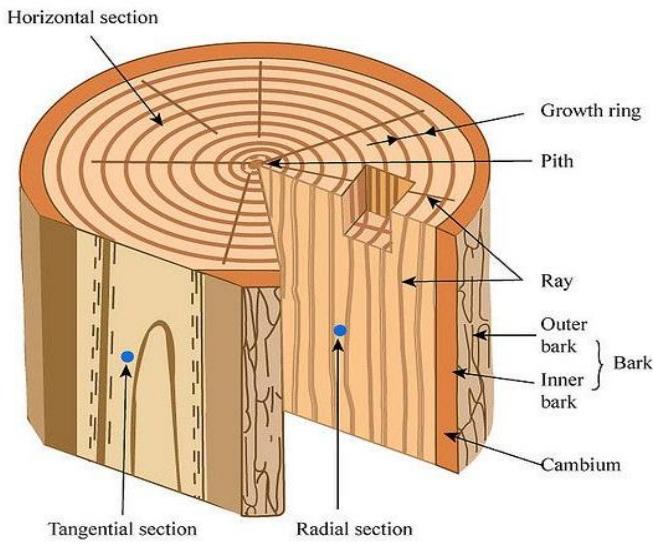


Fig. 3. Wood showing different types of sections

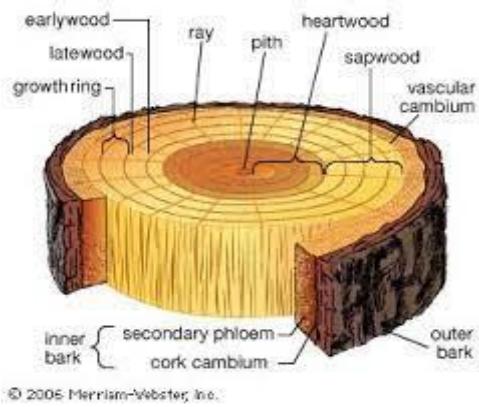


Fig. 4. Wood showing inner and outer bark

9.57.1 Sections

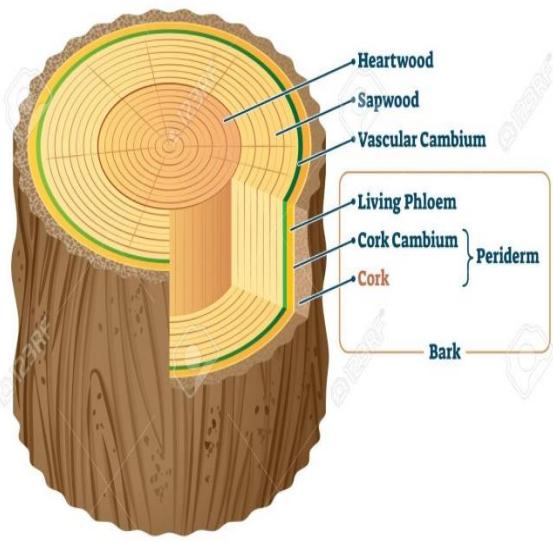


Fig. 5. Wood showing bark

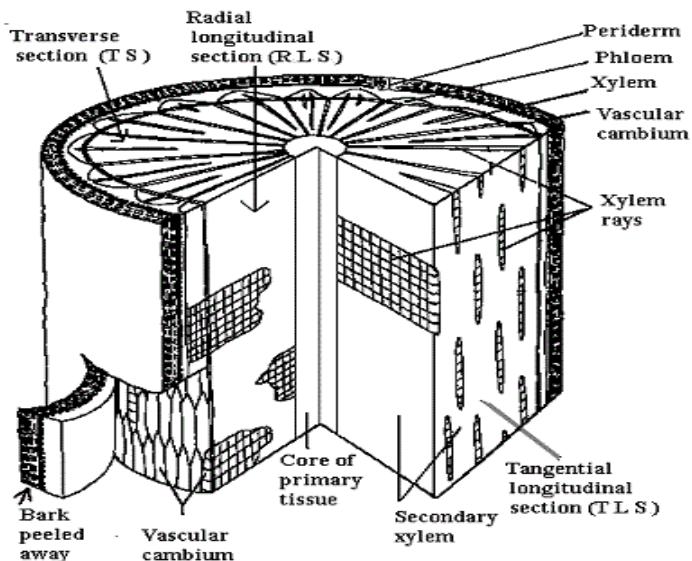


Fig. 6. Wood TS, RLS and TLS

***Mangifera indica* L.**

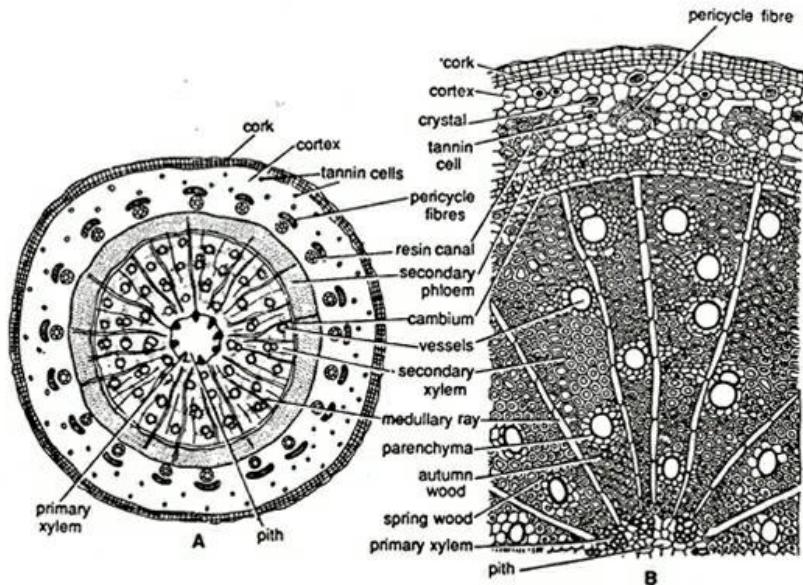
- *Mangifera indica* is from the family Anacardiaceae. Wood is moderately hard, light colored, diffuse porous; contains tannin cells and resin canal; clearly demarcated sapwood and heartwood.

Identifying Characters:

Transverse Section of Stem:

- In the T.S. of stem, following observations are noticed:
- Cork, cork cambium and secondary cortex form the periderm. One side of the cork cells consists of **sclerotic** walls.
- Tannin cells, crystals, stone cells and resin canals are present in the cortex.
- The peripheral side of the each resin canal remains enclosed by an **arc-shaped** strand of fibers which represent pericycle.
- Tannin sacs and fibers containing **crystals** are present in the region of secondary phloem.
- A continuous cylinder of secondary xylem is **traversed** by medullary rays.
- Medullary rays are narrow, closely spaced, and **uniseriate** or sometimes **biseriate**.
- Vessels are angular, large, thin-walled, numerous and uniformly distributed throughout the wood. They make the **wood diffuse porous**.

- Xylem parenchyma is large and **paratracheal**, i.e. found round the vessels.
- Parenchymatous pith contains **secretory ducts** covered with epithelial cells.
- **Growth rings** are clearly observed, and usually they are limited by xylem parenchyma.



R.L.S. Wood:

In the R.L.S. of wood,

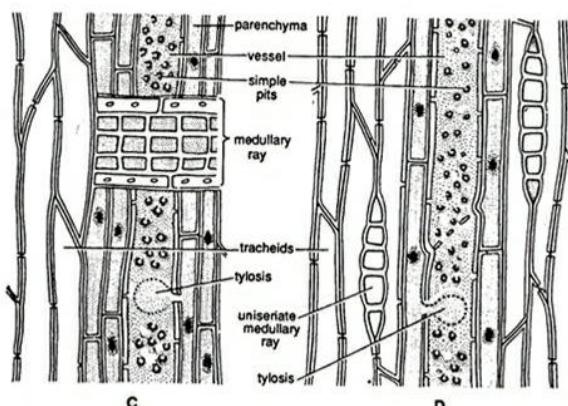
- Large and broad vessels with simple or sometimes **scalariform perforation plates** are present. Living cells of parenchyma remain always associated with vessels.
- Medullary rays consist of **two** types of cells, and are seen at right angle to the long axis of xylem elements in R.L.S.
- Fibers contain **simple pits and septa**.
- Tyloses are **inconspicuous and scanty**.

T.L.S. Wood:

In the T.L.S. of wood,

- Large and distinctly broad vessels with simple or scalariform perforation plates are also seen. Parenchyma cells also remain associated with the vessels.
- The medullary rays are cut **transversely**. They are mostly **uniseriate** and only **rarely biserrate**.
- Fibers contain simple pits and septa.

- Tyloses are **inconspicuous and scanty**.



Inference: The given specimen is the different types of sections of *Mangifera indica* L. wood