

-Vascular Cambium

- lateral meristem
  - periclinal divisions produce derivatives leading to new secondary xylem and phloem
- composed of two types of initials
  - ray initials--> rays (horizontal system)
  - fusiform initials--> xylem, phloem (vertical sys.)
- new cells are produced by wall forming along longest axis
- phragmoplast..fibrous structure that appears at telophase of mitosis between two nuclei and plays a role in the formation of the initial partition (cell plate) dividing the mother cell in two. Has the shape of a spindle connected to the nuclei at first. Spreads ring-like laterally later.
- Dynamic structure; fusiform and ray initials vary in size and can be transformed into each other.
- Control of cambial activity
  - auxin stimulates divisions
  - gibberellins influence the cell type
- Wounding of cambium
- annual rings-cyclic patterns of early and late wood
- ring porosity
- Reaction wood...reaction to tilting branch from the vertical
  - compression wood in gymnosperms; forms on lower surface of horizontal branch
  - tension wood in angiosperms; forms on upper surface of horizontal branch
  - characterized by eccentric secondary xylem/phloem
  - stimulus to cause reaction wood to form is gravity
- Secondary growth in monocots
  - primary thickening meristem
- Anomalous secondary growth of the cambium

-The Cork Cambium, or phellogen