

IAWA Hardwood Feature List Definitions and Illustrations Features 40-59.

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Microscopic Features for Hardwood
Identification. IAWA Bulletin n.s. 10(3):
219-332.

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Slide Set Assembled by E.A.Wheeler

MEAN TANGENTIAL DIAMETER OF VESSEL LUMINA

- 40. $\leq 50 \mu\text{m}$
- 41. $50\text{-}100 \mu\text{m}$
- 42. $100\text{-}200 \mu\text{m}$
- 43. $\geq 200 \mu\text{m}$

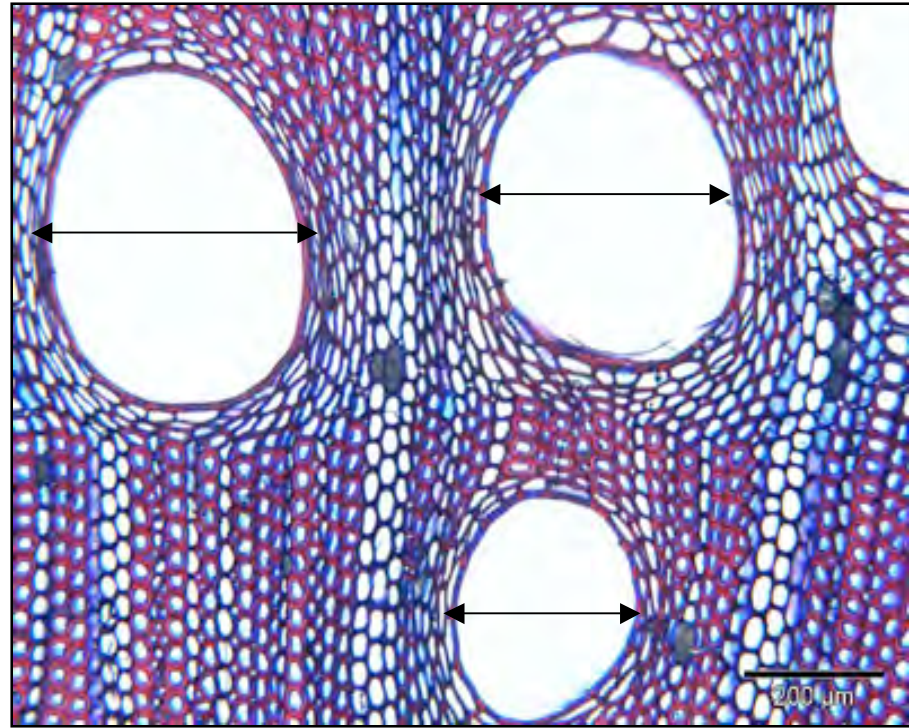
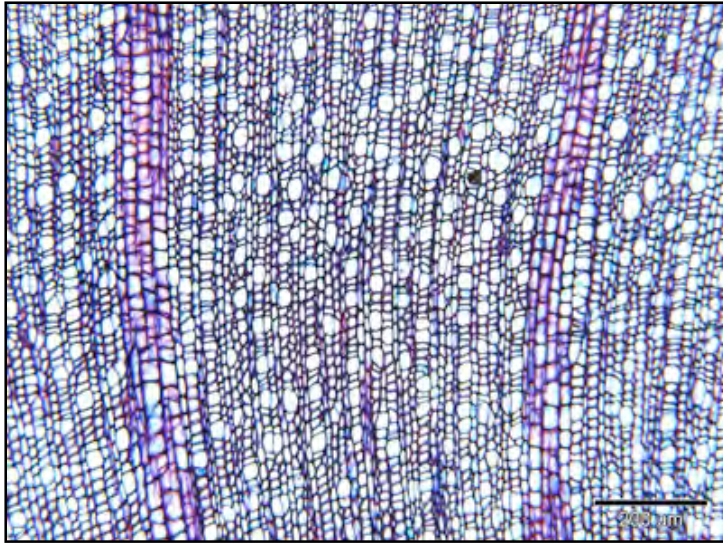


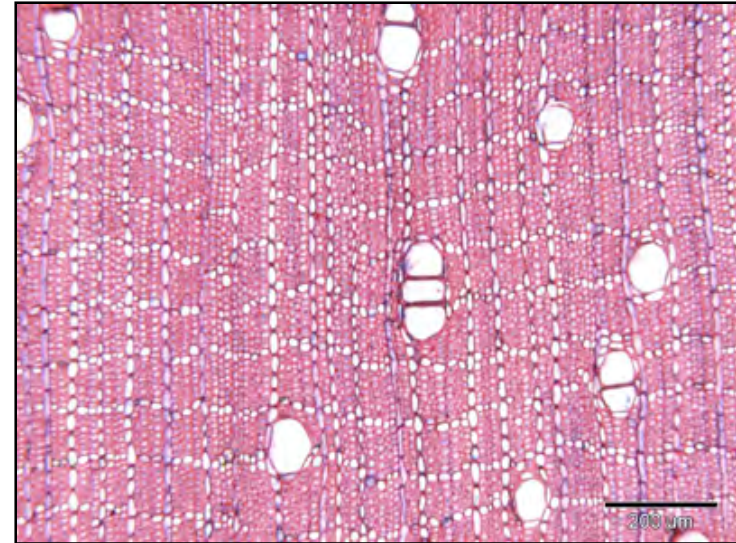
Photo by Frederic Lens

Procedure: Use transverse (cross) sections. The *tangential* diameter of the vessel lumina, excluding the wall, is measured at the widest part of the opening. In ring-porous woods and woods with two distinct diameter classes, only measure the larger size classes.

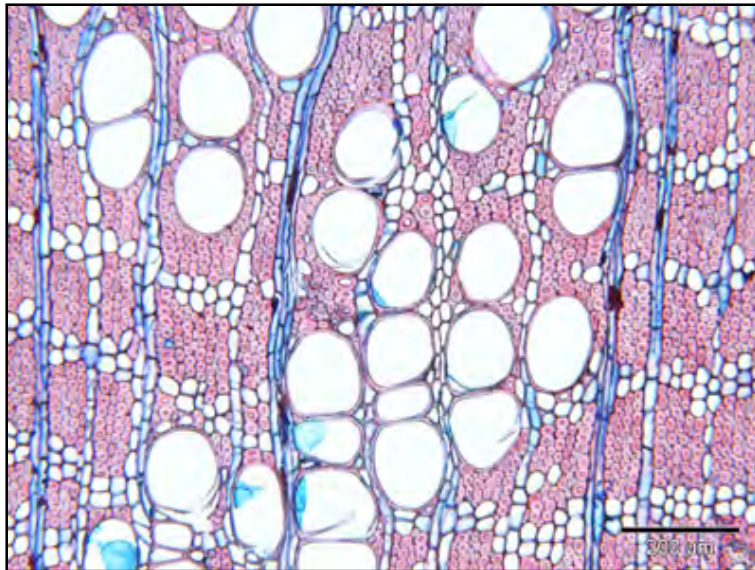
Mean Tangential Diameter of Vessel Lumina



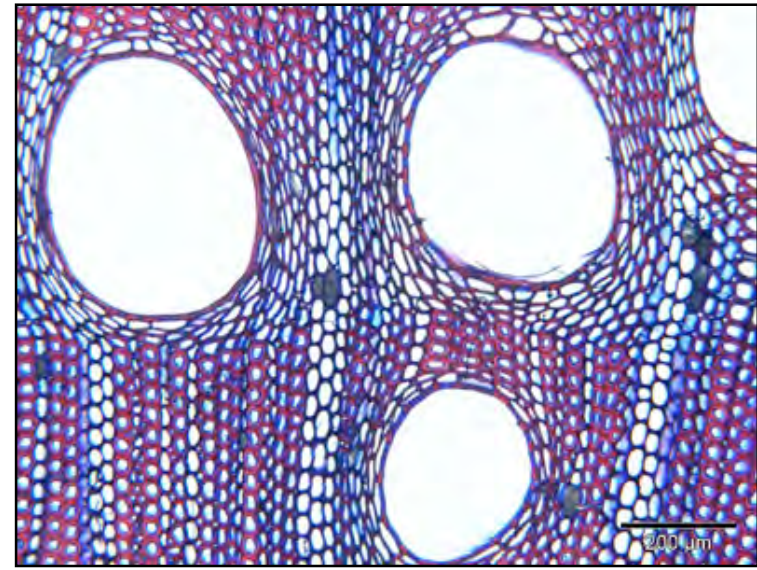
40. $\leq 50 \mu\text{m}$ *Gaultheria strigosa* (Ericaceae)



41. 50 - 100 μm *Diospyros cooperi* (Ebenaceae)



42. 100 - 200 μm *Autranella congolensis*
(Sapotaceae)



43. $\geq 200 \mu\text{m}$ *Norantea guianensis*
(Marcgraviaceae)

VESSELS PER SQUARE MILLIMETRE

- 46. \leq 5 vessels per square millimetre
- 47. 5-20 vessels per square millimetre
- 48. 20-40 vessels per square millimetre
- 49. 40-100 vessels per square millimetre
- 50. \geq 100 vessels per square millimetre

Procedure: All vessels are counted as individuals, e.g. a radial multiple of four would be counted as four vessels. Of vessels that are partially in the field of view only 50% are counted.

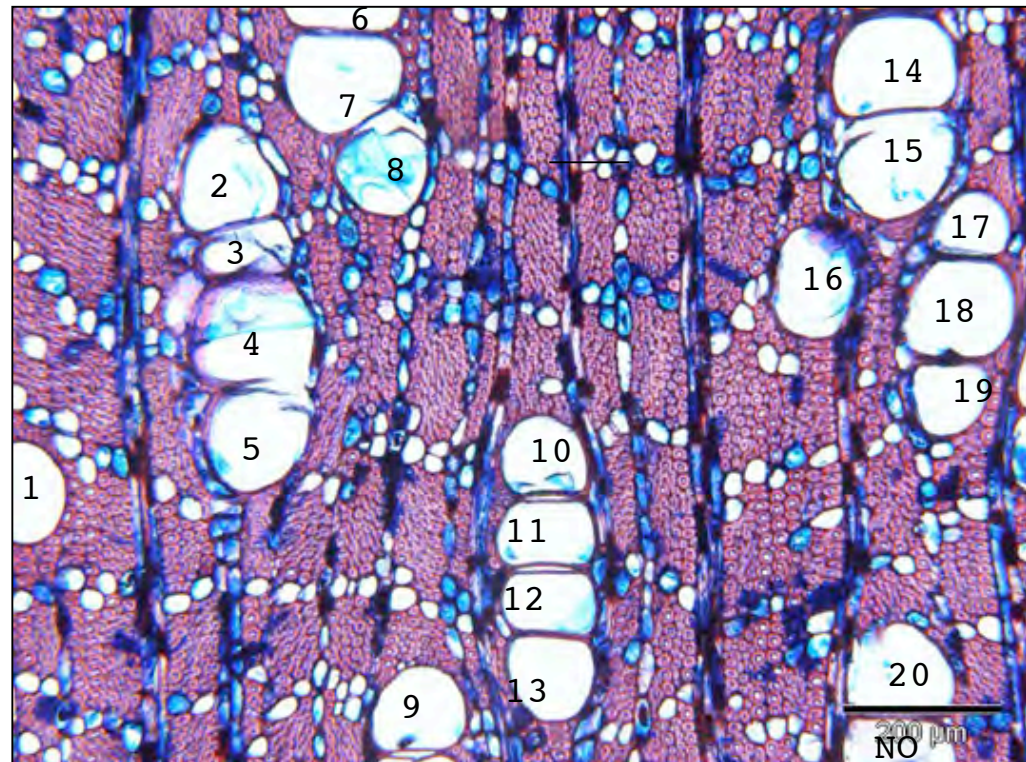
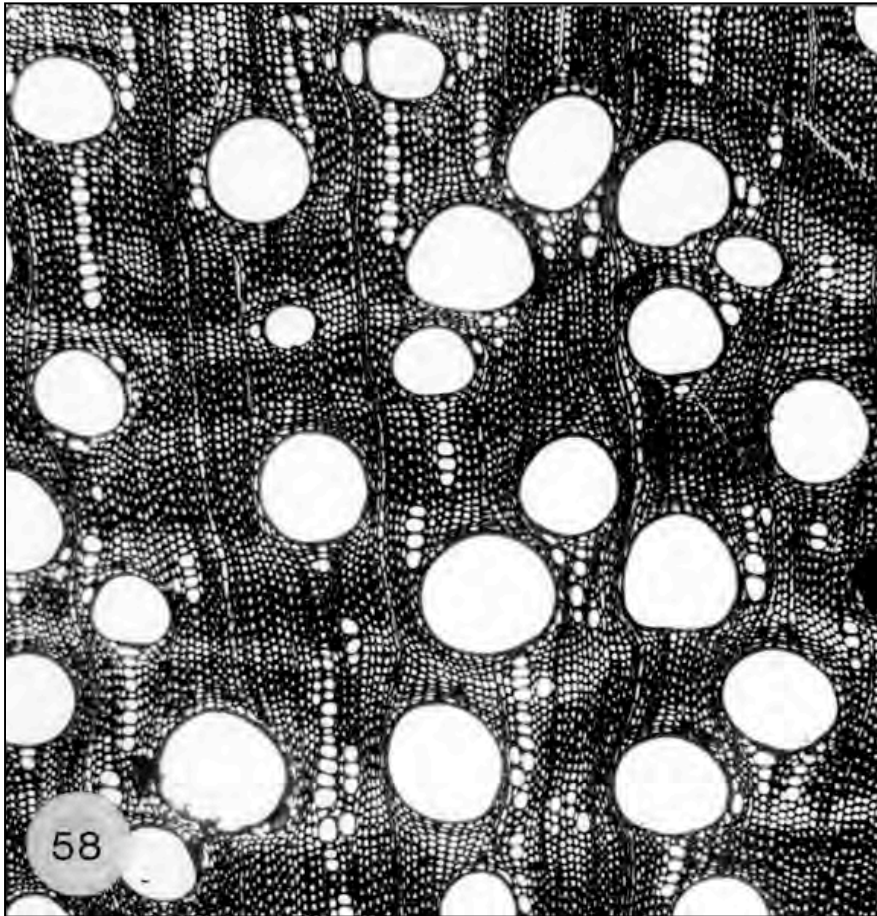
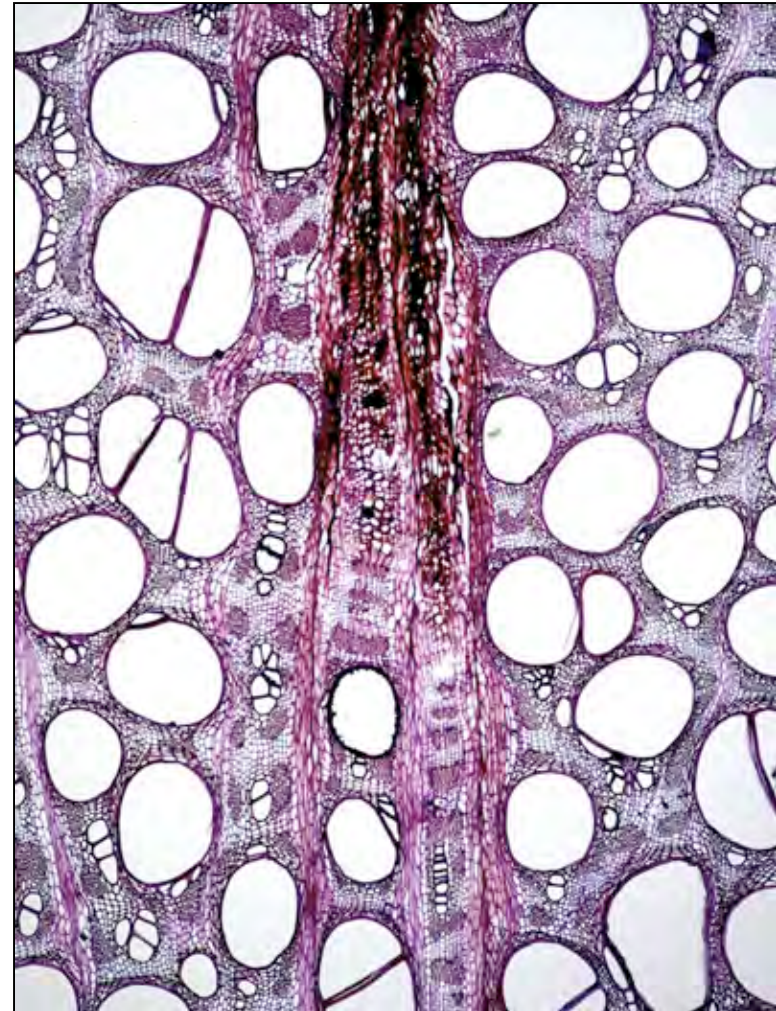


Photo by Frederic Lens

Feature 45. Vessels of two distinct diameter classes, wood not ring-porous = woods with a bimodal distribution of tangential diameters of vessel lumina.



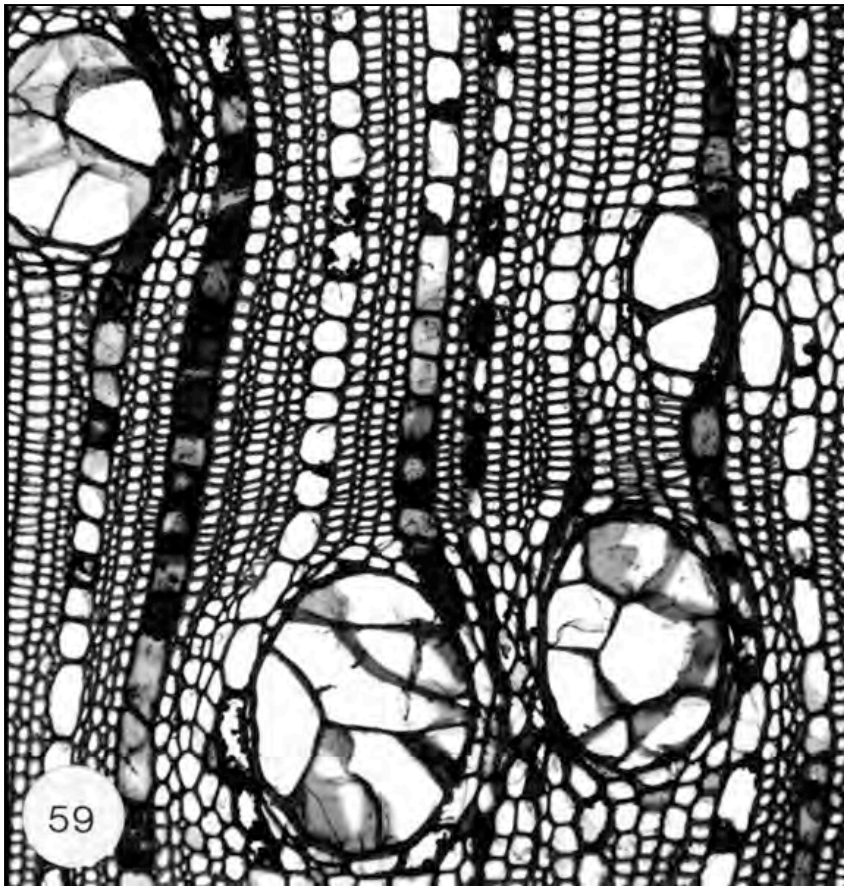
Serjania subdentata (Sapindaceae)
I.W. Bailey, Bailey-Wetmore Laboratory of Plant
Anatomy and Morphology, Harvard University



Pueraria lobata (Leguminosae - Papilionoideae).
FFPRI, Tsukuba, Japan

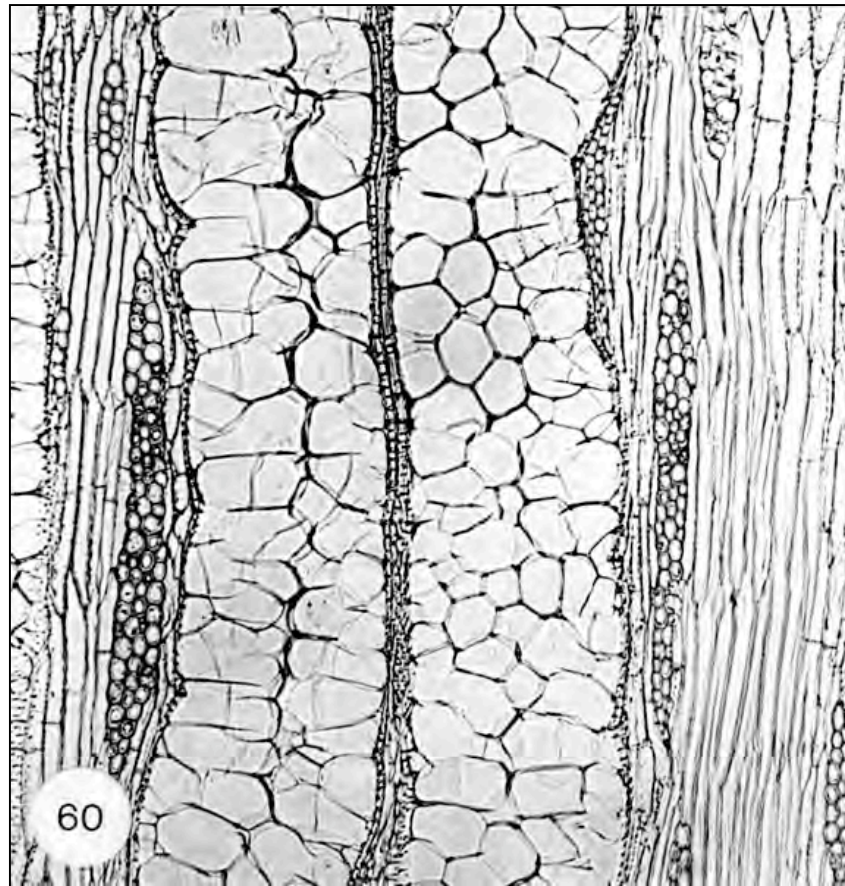
TYLOSES AND DEPOSITS IN VESSELS

Feature 56. Tyloses common = outgrowths from an adjacent ray or axial parenchyma cell through a pit in a vessel wall, partially or completely blocking the vessel lumen, and of common occurrence.



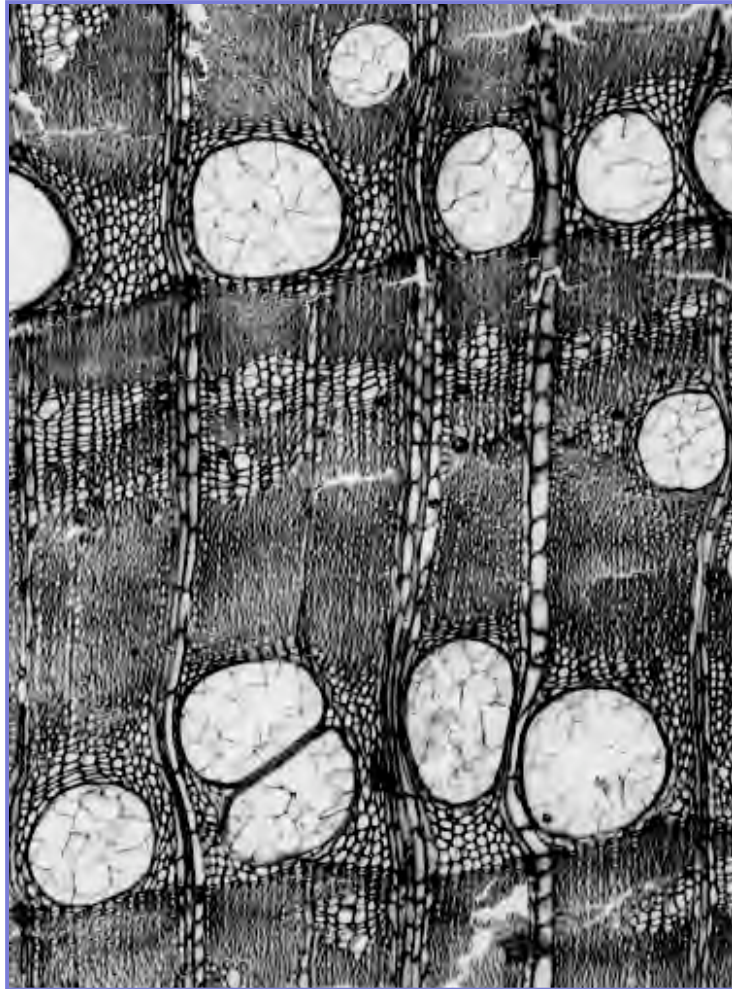
59

Anacardium occidentale (Anacardiaceae)
E.A. Wheeler



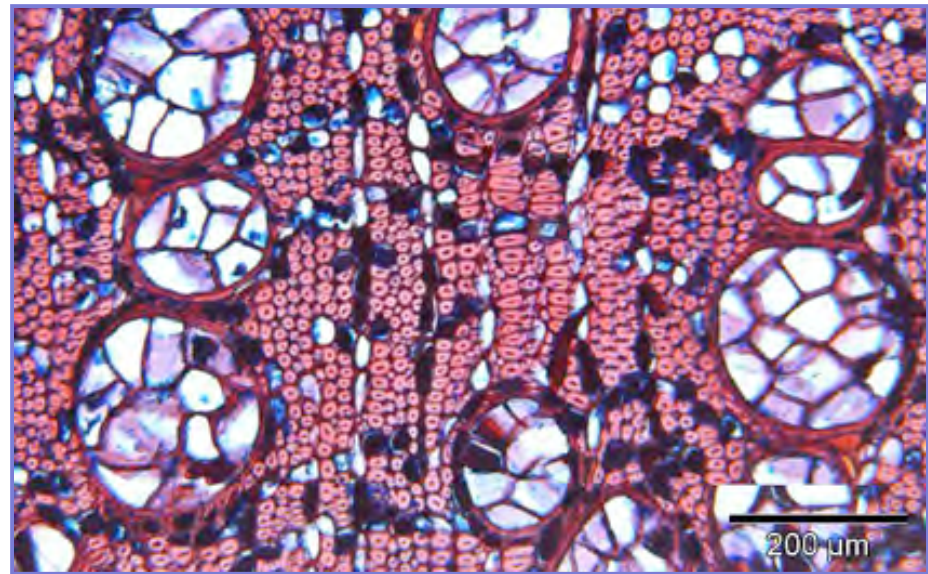
60

Robinia pseudoacacia (Leguminosae-
Papilionoideae) E.A. Wheeler



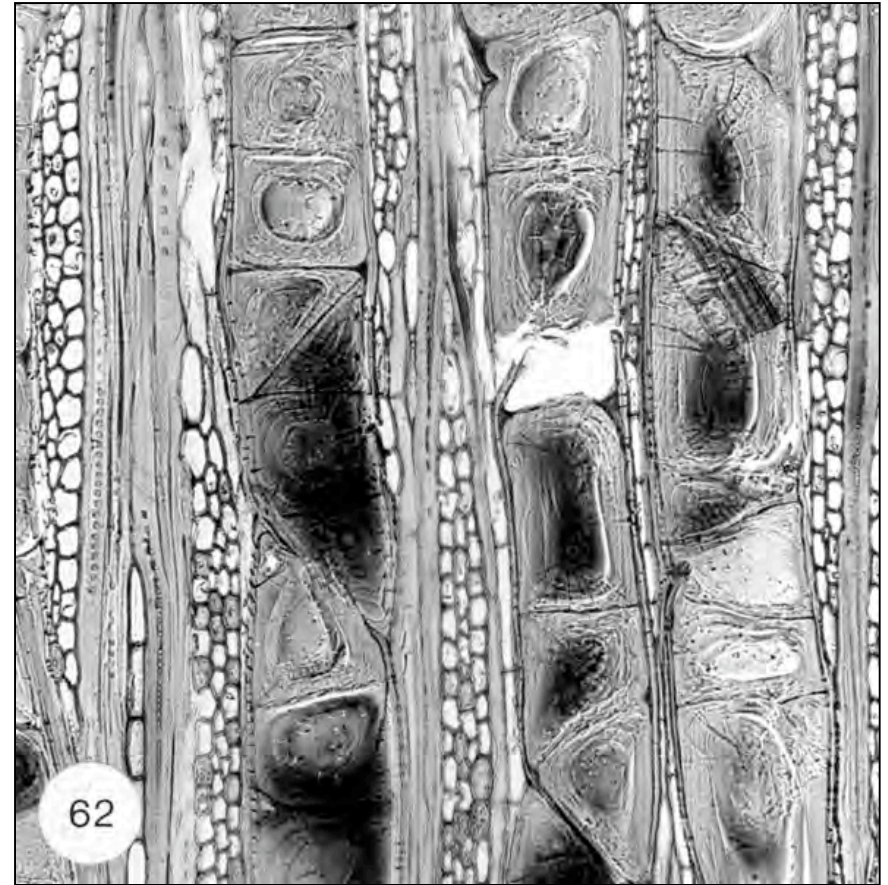
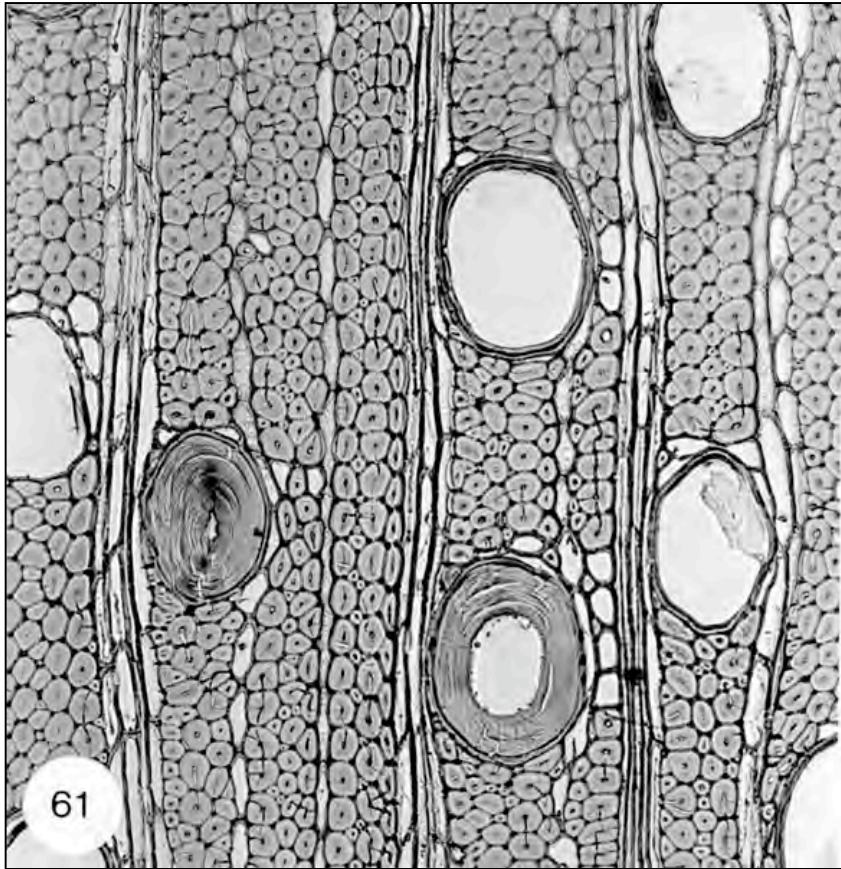
Maclura tricuspidata (Moraceae)
A.M.W. Mennega

Feature 56. Tyloses common



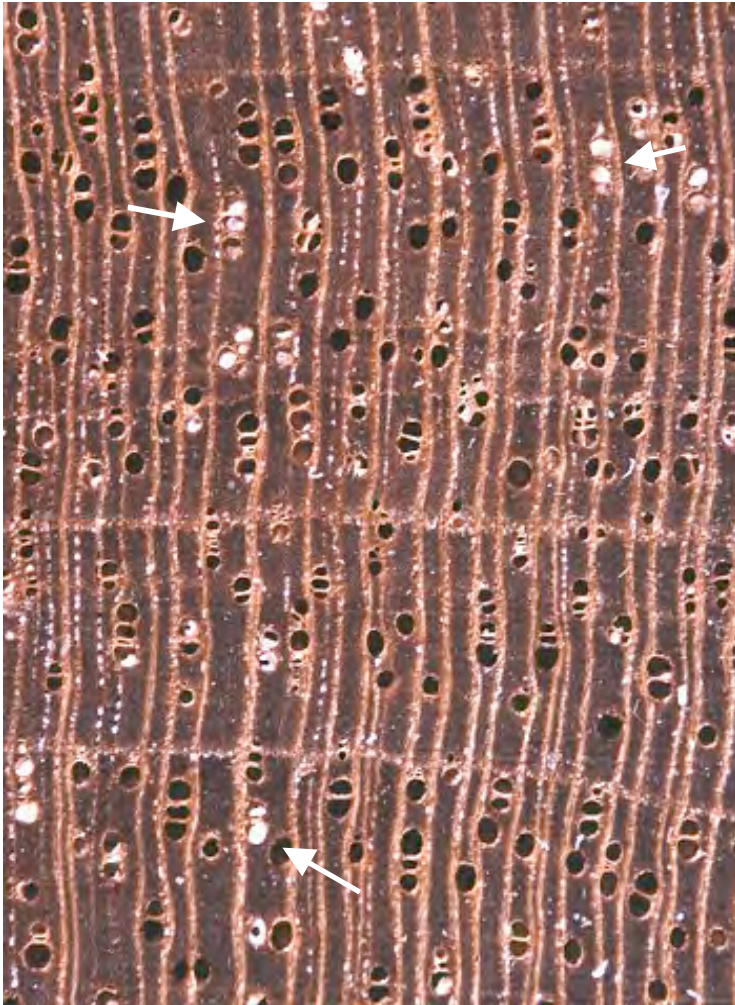
Northia seychellana (Sapotaceae)
F. Lens

Feature 57. Tyloses sclerotic = tyloses with thick, multilayered, lignified walls.

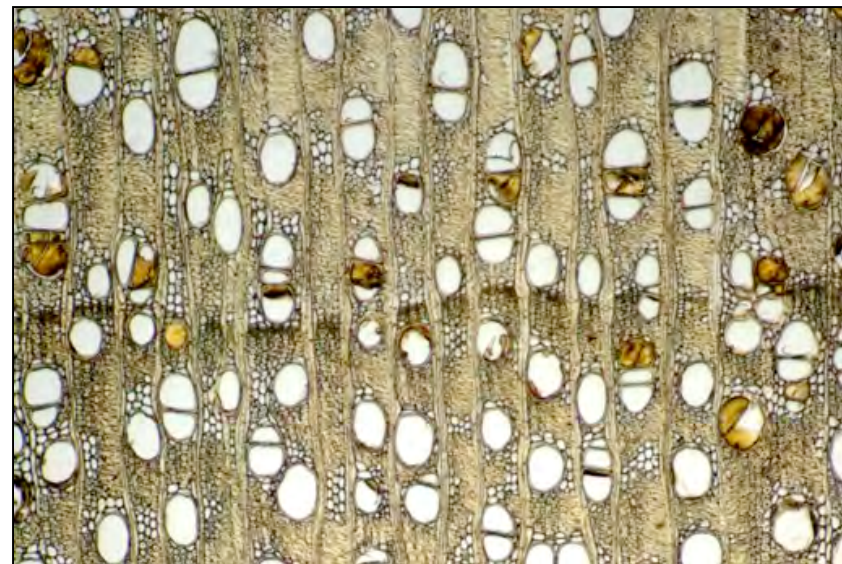
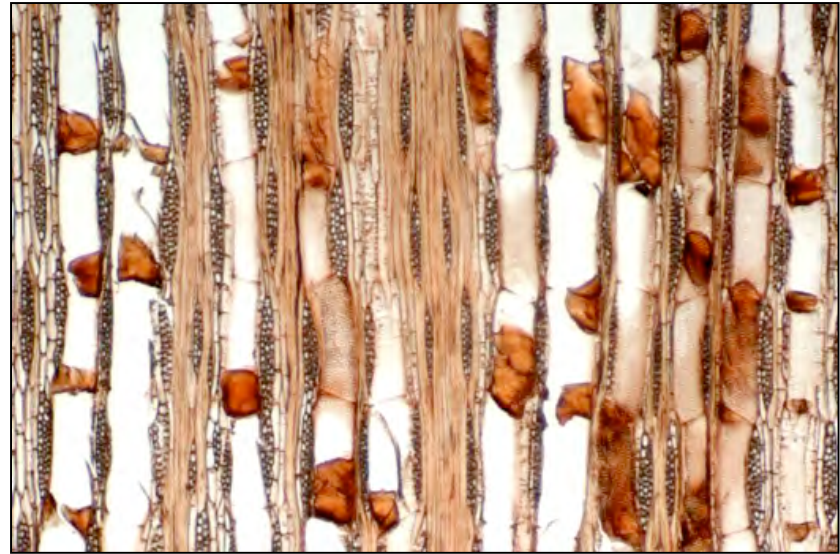


Cantleya corniculata (Stemonuraceae)
K.Ogata

Feature 58. Gums and other deposits in heartwood vessels

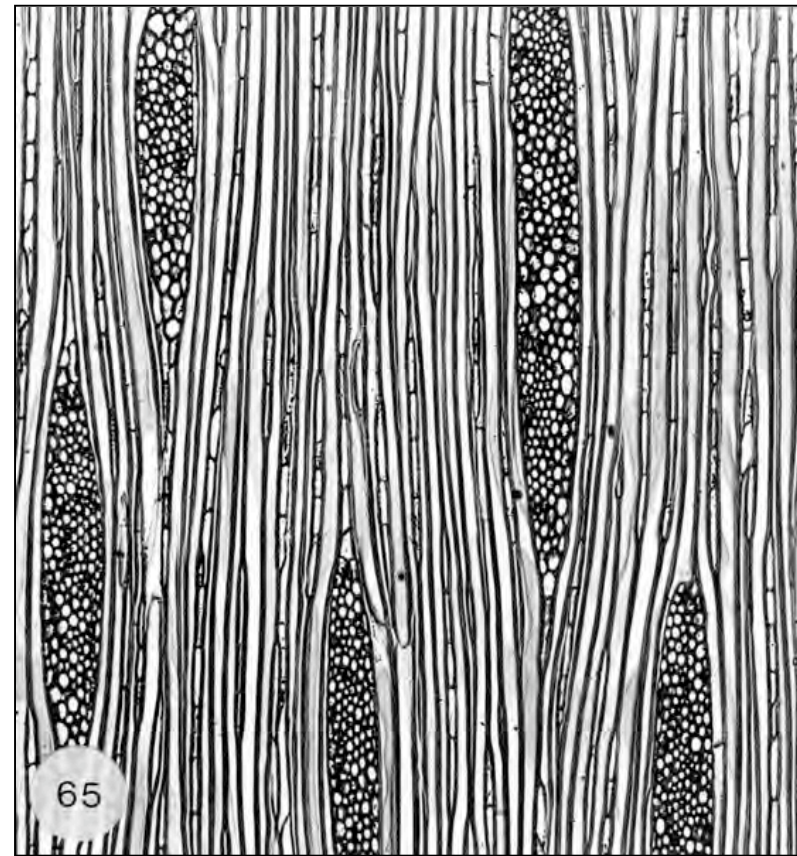
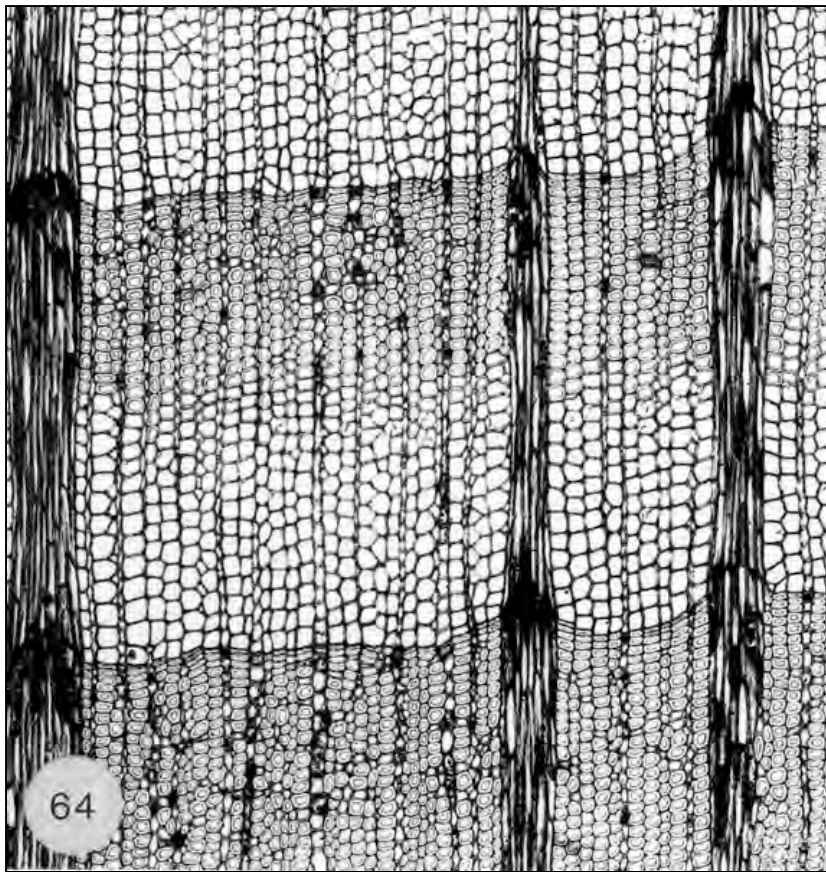


Swietenia mahagoni (Meliaceae)
Chalk deposits (arrows)
L.Y.T. Westra



Pericopsis angolensis (Leguminosae-
Papilionoideae) M.E. Bakker

Feature 59. Wood vesselless = wood without vessel elements, composed only of imperforate tracheary elements and parenchyma



Trochodendron aralioides (Trochodendraceae)

I.W. Bailey, Bailey-Wetmore Laboratory of Plant Anatomy and Morphology, Harvard University