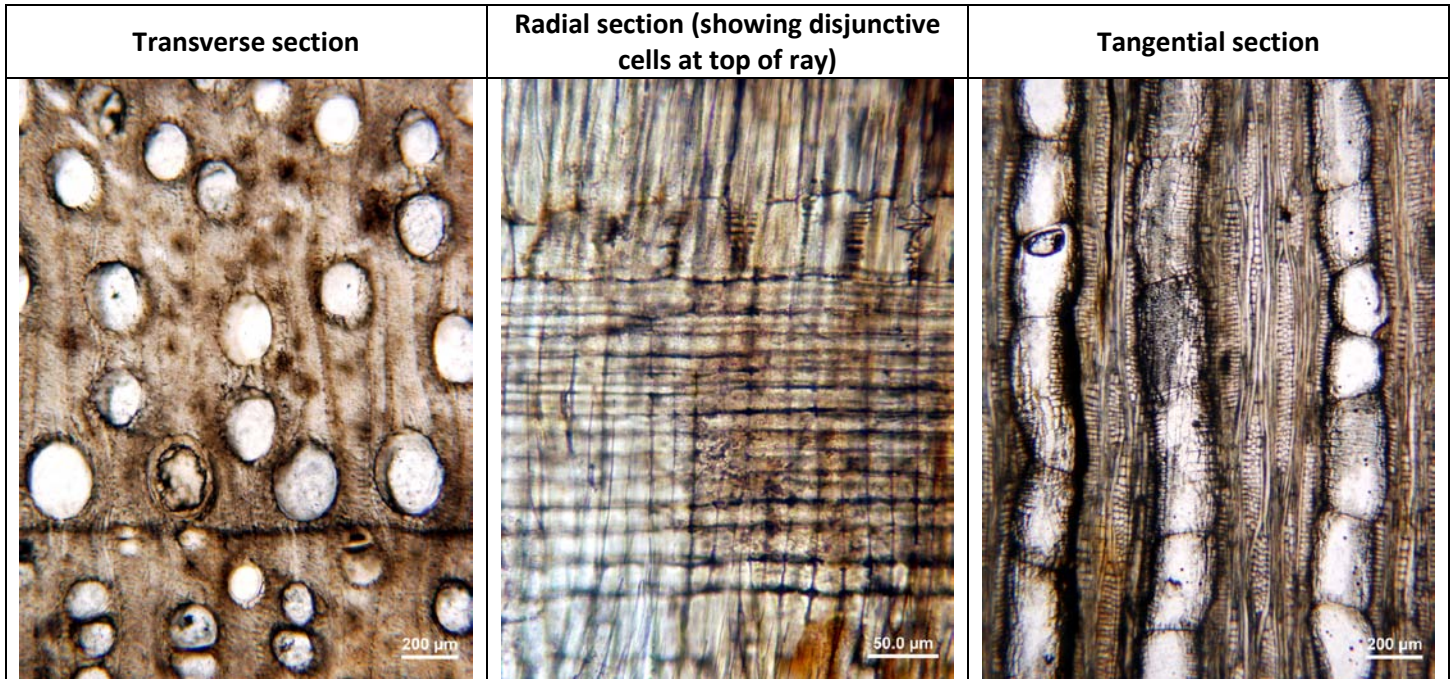


Unknown hardwood 2

Family: Rhamnaceae?

Reference: Wheeler, E.A. & T.A. Dillhoff. 2009. The Middle Miocene wood flora of Vantage, Washington, USA. IAWA Journal, Supplement 7. 101p.



Photos courtesy Dr. E.A. Wheeler

Diagnostic features: Growth rings distinct, diffuse to semi-ring porous vessel arrangement. Vessels mostly solitary and in radial multiples of 2 (sometimes 3). Perforation plates simple, presence of helical thickenings in vessels possible but unable to positively determine. Rays 1-4 seriate, heterocellular with procumbent body cells and 1-3 marginal rows of upright cells. Disjunctive ray cells are present. Axial parenchyma paratracheal, occasionally storied, usually 4-8 cells per strand.

Discussion: This type is represented by a single specimen from Vantage. Wheeler and Dillhoff report that the wood exhibits characteristics in common with several families, but the presence of disjunctive ray cells make it likely that the wood is affiliated with the Rhamnaceae (buckthorn family). Modern members of the buckthorn family native to the Pacific Northwest include several species of *Ceanothus*, a flowering shrub, and the cascara tree, *Frangula purshiana*.