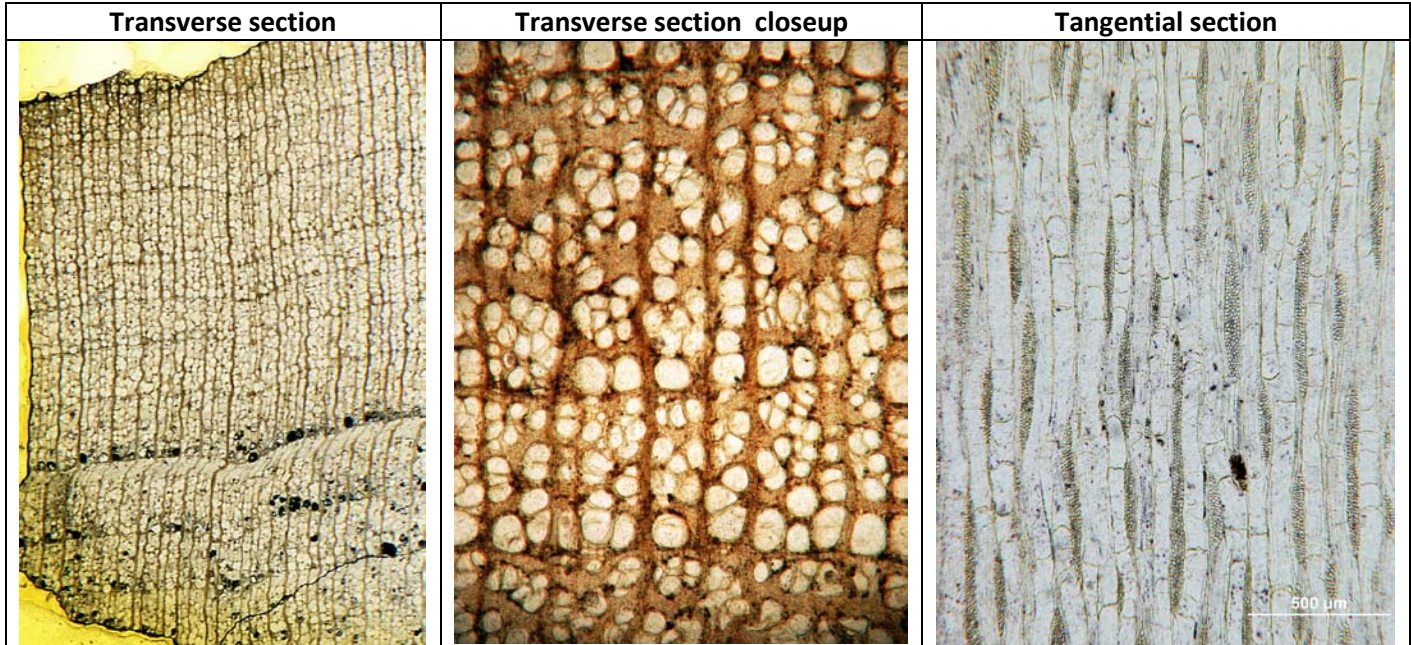


***Ulmus pacifica* (elm)**

Family: Ulmaceae

Naming reference: Prakash, U. & E.S. Barghoorn. 1961. Miocene fossil woods from the Columbia basalts of central Washington, I. Journal of the Arnold Arboretum XLII, 165-199.

Other references: 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, ring porous vessel arrangement tending to semi-ring porous. Earlywood vessels avg. 114µm, widely spaced in a single row. Latewood vessels in clusters, nearly as large as earlywood vessels, arranged in wavy tangential bands. Thin walled tyloses are present in vessels. Perforation plates simple, narrow vessel elements have spiral thickenings along entire length. Rays 1-7 seriate, homocellular, uniseriate rays uncommon. Axial parenchyma paratracheal, mostly four cells per strand. Crystals absent.

Discussion: Prakash & Barghoorn described three species of elm from the Columbia River Basalts. *Ulmus pacifica* is separated from the other two types by virtue of its widely space earlywood vessels, tendency to semi-ring porosity, rays 1-7 seriate, and the absence of crystals in chambered axial parenchyma. This fossil species does not match up well with any modern elms. Wheeler & Dillhoff suggested that *U. pacifica* belongs in the subgenus *Oreoptelea*, which contains the rock elms and winged elms.

Elm woods are a common constituent of many Columbia River Wood deposits. Beck (1945) reports them as abundant from Vantage, common at Squaw Creek and Saddle Mountains, and rare at Slide Ranch, Roza Creek, and Lookout Point. This author has also seen elm specimens from Yakima Ridge, Yakima Canyon, Sunnyside, Asotin Creek, and Roosevelt. In modern times, elms are extinct in the Pacific Northwest, but native to many other areas of the northern hemisphere, including eastern North America and Eurasia.