

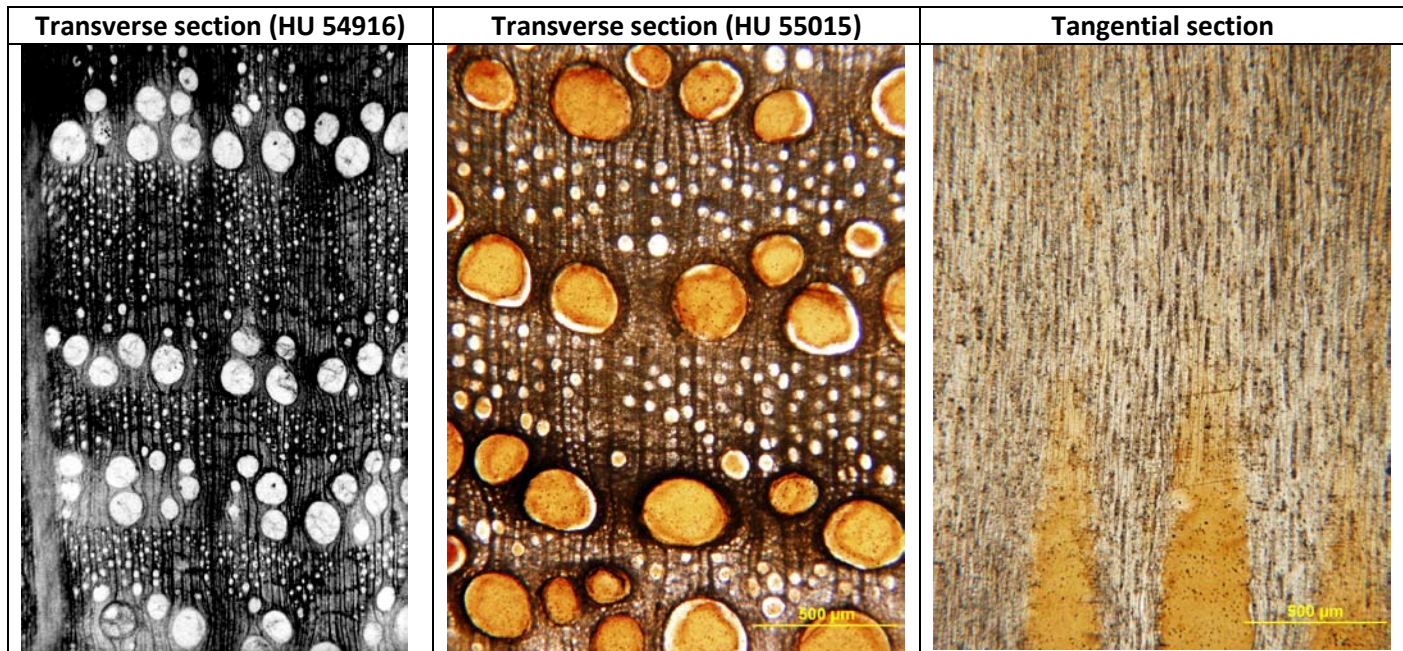
***Quercus leuca* (oak)**

Family: Fagaceae

Synonyms: *Quercus sahnii* Prakash & Barghoorn, *Quercoxylon compactum* Prakash

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. Vessels solitary, earlywood vessels large and round in outline, latewood vessels distinctly smaller, somewhat angular in outline. Tyloses present. Perforation plates simple. Rays of two size classes – uniseriate smaller rays and broad rays over 10 cells wide, rays homocellular. Axial parenchyma diffuse-in-aggregate to banded, with some crystalliferous strands.

Discussion: Prakash & Barghoorn originally described three separate species of oak from the Columbia River Basalts. The transverse section images above show HU 54916, which is the type specimen for *Q. leuca* and HU 55015 which was Prakash's type specimen for *Q. compactum*. Further investigation by Wheeler & Dillhoff determined that there was not enough distinction between the types to consider them as separate species, so all three previously described species were combined into *Quercus leuca*, which was the first one described by Prakash & Barghoorn. Even modern oaks cannot usually be identified to the species level based on wood anatomy alone, only to the major groups – red oaks, white oaks, and live oaks. Red oaks are ring porous, with thick-walled latewood vessels that are round to oval in outline. White oaks are ring porous with thin-walled latewood vessels that are angular in outline, and typically have abundant tyloses. Live oaks are diffuse to semi-ring porous.

Oak wood is a common element of the Columbia River Basalt wood localities and can be found in most private and public collections. At present, all of the oaks are assigned to *Q. leuca* in the white oak group. Thin section examination of specimens from localities other than Vantage may well turn up some red oaks.

Besides the wood specimens, fossilized acorns have been found and described from the Yakima River bog localities (Borgardt & Pigg, 1999), which were also assigned to the white oak group.