Tungoil Tree VEFO

Vernicia fordii (Hemsl.) Airy-Shaw

Synonyms: *Aleurites fordii* Hemsl, Chinese wood-oil tree.

From: Miller, James H. and Steve T. Manning. [working title] An Expanded Nonnative Invasive Plants of Southern Forests: A Field Guide for Identification and Control. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. DRAFT - August 2008

Family: Euphorbiaceae

Plant. Deciduous tree (leaves fall with frost) to 40 feet (12 m) in height having a rounded crown with many alternate branches and basal sprouts. Leaves heart-shaped, some with rounded sinuses, and long petioles with dark glands where they join the blade. Clusters of showy, white, trumpet flowers in spring yield large spherical "nuts" in the fall from the female flowers.

Caution: Leaves and nuts are poisonous.

Stem. Twigs moderately stout, often radiating outward in numbers from a swollen branch knot that terminates each year's growth, The branch knot has multiple leaf and fruit stem scars along with numerous protruding light dots. Twigs light green, becoming mottled with a silvery gray film and turning grayish to gray tan with whitish dots (lenticels) that turn to faint lengthwise stripes that increase with age. Buds overlapping, maroon, with multiple, leafy scales. Pith white and spongy. Leaf scars circular when whorled or oval when stacked together. Larger scars reveal 8 vascular bundle scars. Bark light tan to light gray, tight, covered with corky dots.

Leaves. Alternately whorled, heart-shaped, 3 to 14 inches (7.5 to 35 cm) long with one tip or lobed with deep sinuses and three to five pointed tips and a cordate base. Two rounded, dark reddish-maroon glands occur where the petiole joins the blade. Glossy and dark green above with five prominent light-green veins radiating from the base and whitish silvery beneath. Petioles 3 to 6 inches (8 to 15 cm) long, green with a maroon tinge. Leaves turning yellow in the fall with showy maroon petioles and lower veins.

Flowers. March to April. Large, terminal branched clusters appearing before leaves to cover the tree, separate male and female flowers, about 1 inch (2.5 cm) wide, both widely flared having five to seven brilliant white petal lobes splashed with red to maroon within the throat radiating outward in lines and protruding yellow floral parts,. Stalks to 6 inches (15 cm) long, smooth, red to orange, the same color as the sepals.

Fruit and seeds. September to November. Large, spherical, woody nuts (drupes), 2 to 3 inches (5 to 8 cm) wide, dark green turning maroon to finally brown, dropping whole to the ground or water to split into three to seven wedged-shaped, fibrous sections each with a large brownish nut, about 1 inch (2.5 cm) long.

Ecology. Rapid growing in moist and well-drained soils, forming dense stands. When first introduced, fruit could not withstand freezing temperatures, until crop breeding yielded frost hardy varieties. Colonizes by stump sprouts and spreads by animal and water-dispersed seeds. Viable seed can be produced at 3 years.

Resembles paper mulberry [*Broussonetia payrifera* (L.) L'Hér. ex Vent], southern catalpa, *Catalpa bignonioides* Walt., northern catalpa, *C. speciosa* (Warder) Warder *ex* Engelm. and princetree, *Paulownia tomentosa* (Thunb.) Sief. & Zucc. ex Steud., which have similar shaped leaves but are velvety or ruff hairy and have no glands.

History and use. Initially introduced in 1905 from China with further introductions to the lower Gulf Coast States for use in the tungoil industry, which collapsed by the 1950's due to freezes, hurricanes, and off shore competition.