President’s Message:
A Naturally-occurring Self-pruning Yew native to the Klamath Mountains
by Rich Spjut

We usually think of a Christmas tree as having an overall conical shape with densely crowded branches and upcurved needles spreading uniformly all around its branches. Most commonly advertised are fir trees (Abies spp.), while western and eastern white pines are also sold. But how about a yew (Taxus), in particular a Klamath yew? The Jepson Manual (2012) describes the Pacific yew, Taxus brevifolia, as having a trunk to 18(-25) m, noting also “T. b. var. polychaeta Spjut; T. b. var. reptaneta Spjut.” Then adds “See Spjut (2007) for alternate treatment of Taxus in CA.” Here I report in more detail on the other varieties including an unrecognized Klamath yew (Taxus brevifolia var. klamathensis Spjut).

Variety brevifolia (Pacific yew) would not be a suitable Christmas tree because of its irregular branching, especially the relatively long branches, which spread more upwards than horizontal. This yew occurs widely in the Pacific Northwest, reaching its

Comparison of ovular shoots of Taxus brevifolia var. brevifolia with var. polychaeta. Above: var. brevifolia – a short ovular shoot (cone) with immature seed before aril has developed. Top left: var. polychaeta from Sonoma Co., CA – immature seed cone with five ovular shoots. Top right: var. polychaeta from near Spokane, WA – twig-leaf specimen with three long ovular cone shoots (immature).

Photos by Richard Spjut unless otherwise noted.

southern limits in California along the coast in the Santa Cruz Mountains and Yosemite Valley in the Sierra Nevada (Calflora). It has been reported as far south as Tulare County, but without support from herbarium specimens that could have been lost from the 1906 San Francisco earthquake fire. Its apparent disappearance from the southern Sierra Nevada is probably due to human activity; one might even speculate it was once in Kern County before the uplift of the Transverse and Coast Ranges (Spjut 2007).

**Variety polychaeta** (Worm cone yew) is a tree similar to var. brevifolia that differs by producing multi-ovular shoots, elongated and worm-like, or short branched near base, in contrast to the usual short 1 or 2 (often unequally developed) ovular shoots in the typical and other varieties. Var. polychaeta is relatively uncommon, occurring at widely scattered locations in the Pacific Northwest.

**Variety reptaneta** (Thicket yew) is a shrub with ascending branch-like stems. The epithet reptaneta refers to plants forming impenetrable thickets — in open sunny north to east-facing drainages at mid elevations as seen in the type from Siskiyou County near the corner of Humboldt and Trinity counties. The plants reproduce asexually by layering — a rooting stem in contact with the ground from which a clonal plant develops and becomes detached from the parent through decay of the connecting root such as described for the Canada yew, *T. canadensis*. The individual clone, which is the same genotype, is called a genet or ramet. In these shrub yews, layering regularly occurs without injury to the parental plant. Both the parental and new clone (ramet) continues to thrive and reproduce vegetatively as well as sexually. Two other growth forms of var. reptaneta are generally recognized. One primarily occurs in the understory of coniferous forests in which the ramets develop at more distant intervals, often in close mutualistic-like association with Douglas fir. A third, known only from northwestern Montana, is similar to the prostrate form of the Canada yew (*T. canadensis*) by its branches creeping along the ground for hundreds of meters without individual distinction of a plant. It remains to be determined whether this low branch form originates from a branch near the base of a tree that has since disappeared, or reproduces its prostrate form by seed.

**Variety klamathensis** (Klamath yew) is a tree — that

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**Klamath yew compared to Irish yew.**

**Top left:** Solitary tree with old snag branches; these are the branches that persist after fire or other disturbance, the dark green is new growth of epicormic branches as a result.

**Top center:** Bole of Klamath yew within a dense forest of yew, the bole characterized by abundant dark knot-like shallow depressions (epicormic buds) from which epicormic shoots grow out of after disturbance. **Top right:** Illustration of Irish yew at Florence Court, Ireland.

**Lower left:** Close-up of trunk of Klamath yew densely covered with very short epicormic leafy branches and old needles, completely obscuring the trunk.

Unlike the typical variety — can survive fire. In regenerating in open areas, short epicormic branches grow abundantly from the main trunk. Its overall compact growth form is columnar to conical in shape, the result of which may be referred to as self-pruning. I discovered this new variety in southern Oregon in the eastern Klamath Region while conducting a survey of white corn lily (*Veratrum californicum*) in the western United States in August 2011.

The appearance of the Klamath yew resembles those in European topiary. Its columnar form also appears similar to the Irish yew, which was discovered by a farmer in 1760, George Willis, who dug up the only existence of the two seed-deer.
bearing (female) trees growing on a rock in northwest Ireland and transplanted them, one to his garden and the other he gave to his landlord, the Duke of Enniskilen. Willis’ plant lived for about 80 years, while the other lived on to be the source of cuttings for the Irish yew cultivated in many areas of the world, even in such warmer places as Redding, CA. Its similarity to columnar forms of Klamath yew is unusual when compared to the typical Pacific

*yew; the Irish and Klamath yews can be distinguished by their branching, all upright in the Irish yew, spreading horizontal in the Klamath yew, and also leaf anatomy (Spjut 2007). Other distinctive features of the Klamath yew are swollen trunks, pollen produced in midsummer, and occasional yellow arils on some plants. Varietal status instead of species status is weighted on leaf anatomical character differences among species. As to commercial growing for Christmas trees, it would not be suitable because of its slow growth and high cost as seen advertised for similar European topiaries of *T. baccata*.

**REFERENCES**


iv Epicormic shoots, in contrast to adventitious shoots that develop spontaneously from buds lacking a vascular connection to the meristem, are a regular developmental pattern on the aerial system of the tree such as on the hole and/or branches. They originate from dormant buds in or beneath the stem-bark with a connection to the vascular tissue, and become activated—upon stress such as fire or sudden exposure to light—to produce new branches (Kormanik & Brown, 1967). Epicormic bud initiation is determined by the ‘genetic growth plan’ (Meier et al., 2012). Both sequential and cauliferous shoots are recognized in *Taxus brevifolia* var. *klamathensis*. They are of two kinds (a) short branches 1–2 m long, and (b) leafy branchlets usually <30 cm in length.


vi Veitch and Sons, A Manual of the Coniferae, Publ. by the authors, Kings Road, Chelsea, 1881.

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