1135-VP-2358 **Ronald Gould** and **Warren Shull*** (wshull@emory.edu). *On Spanning Trees with few Branch Vertices.*

A conjecture of Matsuda, Ozeki, and Yamashita posits that, for any positive integer k, a connected claw-free n-vertex graph G must contain either a spanning tree with at most k branch vertices or an independent set of $2k+3$ vertices whose degrees add up to at most $n-3$. In other words, G has this spanning tree whenever $\sigma_{2k+3}(G) \geq n-2$. We prove this conjecture. This result is best possible, and generalizes a sufficient condition for traceability. (Received September 26, 2017)