1145-11-1667   **Nathan H. Fox*** (`nfox@wooster.edu`). *An Extension of Tree-Based Methods for Hofstadter-Like Recurrences.* Preliminary report.

The most famous and most enigmatic integer sequence defined by a nested recurrence relation is Douglas Hofstadter's Q-sequence. Despite some apparent patterns, the long-term behavior of this sequence is poorly understood. There are similar sequences with much nicer behavior, though. One example is Conolly's sequence, defined by the recurrence $C(n) = C(n - C(n - 1)) + C(n - 1 - C(n - 2))$ and the initial conditions $C(1) = C(2) = 1$, which has a property known in the literature as *slow*. This and several other slow sequences generated by nested recurrences are known to have combinatorial interpretations in terms of enumerating leaves in trees. For the Conolly sequence, the tree-based interpratation proves an intimate connection with the powers of two. In fact, it has an alternate, purely number-theoretic construction based on powers of two. Replacing powers of two with Fibonacci numbers in the construction yields a different slow sequence. In this talk, we discuss the properties of this new sequence and show that it also satisfies a nested recurrence. In particular, the recurrence it satisfies has higher nesting depth than the Conolly recurrence. We also explain how this sequence has a tree-based interpretation. (Received September 23, 2018)