Cutting Propagation of *Emmenopterys henryi* – Lesson Learned©

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This brief article is as much about what you learn when propagating as it is about the details of propagating a specific tree, *Emmenopterys henryi*. This tree is mostly found in botanical and collectors' gardens, and was described by E.H. Wilson as, "one of the most strikingly beautiful trees of Chinese forests". A member of the *Rubiaceae*, or madder family, the species is best known for its white flowers and white bract-like calyces in June and July, and its lustrous green foliage (Dirr, 2009; Hsu, 2006; Sargent, 1917). One of the remarkable things about *Emmenopterys* is that it takes many years to reach maturity and flower, and the occasion of an individual tree's first flowering is often a cause for celebration.

For several years in the mid-2000s we were focused on propagating an individual tree at Chanticleer. This tree stills grows in their Asian Woods and the staff at Chanticleer were interested in adding additional specimens grown from this one. The branches on this tree were high up but for several years we took cuttings from basal sprouts, with cuttings taken in August 2006 and June 2007. We had no success with these cuttings using either 1000 ppm or 3000 ppm K-IBA.

On 31 July 2007 while visiting the nursery at Longwood Gardens, we noticed two plants of *E. henryi*. We were visiting the nursery for other reasons but thought we would take a chance and stick some cuttings from these trees. These trees had not yet reached the age of flowering.

We took semi-hardwood terminal cuttings (4-5 in.) of current season's growth. The cuttings were double-wounded and dipped in 1000, 3000, and 5000 ppm K-IBA (in water) solution for 10 sec. The rooting medium was perlite and peat (7:3, v/v), and the rooting pots were placed in a greenhouse with fog (85% RH) and supplemental mist at an accumulative setting of 200 w/m^2 between the hours of 10 am and 3 pm. The cuttings were given bottom heat of 70°F (21°C) and supplemental lighting until 12 am. Using this method, we had an average of 71% rooting from one tree (probably Longwood #2000-674*A) and an average of 5% from the second tree (probably Longwood #2000-674*B).

Thinking that this first year of cuttings might have been a fluke, we decided to try again for the following 2 years. We took cuttings again on 30 July 2008 and 5 Aug. 2009. We used the same techniques and conditions as in 2007. In 2008, we only used 3000 ppm K-IBA and achieved 71% rooting from one tree (Longwood #2000-674*A) and 21% from the second tree (Longwood #2000-674*B). In 2009, with 3000 and 5000 ppm K-IBA we had an average of 22% rooting from one of the trees at Longwood Gardens (Longwood #2000-674*B; Longwood #2000-674*A died sometime in 2009).

According to Barrett Wilson (2012), Research Specialist at Longwood Gardens, he has had very similar results in propagating these trees (personal correspondence). He took softwood cuttings (6 in.) of current season's growth that had begun to firm up. These cuttings were generally taken around mid-July. The cuttings were wounded on two sides of the base and dipped in 5000 ppm K-IBA solution for 10 sec. The rooting medium was perlite and milled peat (3:1, v/v). Mist was set at 6 sec. every 6 min. Barrett reported good success with this procedure, with close to 70% success.

In summary, we found our best success with rooting immature trees of *E. henryi* by taking semi-hardwood terminal cuttings in late July/early August, using 3000 or 5000 ppm K-IBA in H_2O, placing the cuttings in a propagation house with fog, mist, bottom heat, and extended photoperiod. A very important aspect is that we left the cuttings undisturbed in their rooting containers and placed these in a greenhouse that was heated to 34°F (1°C) until the following spring. The cuttings were potted up once they showed signs of pushing new growth. We also had better success with open grown trees in full

sun at Longwood Gardens, than with the shade-grown tree at Chanticleer.

So while these may not be profound, the lessons learned from propagating *E. henryi* are two-fold: the first is that rather than focusing on an individual tree, look around and see if there are any other plants that might work. The second lesson is similar. Think differently and rather than focus on what you think will work, take chances, try something different, and try to think about the biology of the plant. Who knows, you might just get lucky! Sometimes we have our propagating blinders on, and it is worth taking them off to gain a new view on things.

Literature Cited

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Fig. 1. Flowers of *Emmenopterys henryi* growing at Chanticleer. Photo courtesy of Lisa Roper at Chanticleer, lr@chanticleergarden.org.