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Coral Honeysuckle Easy to Propagate with Cuttings

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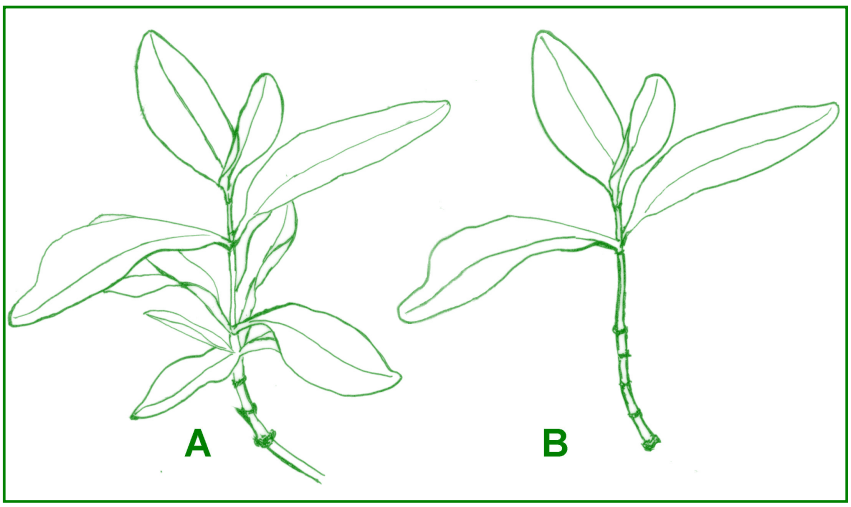
One of my earliest botanical/horticultural memories involves time spent with my dad taking cuttings of ornamental plants. Every spring, he would start several dozen new chrysanthemums from carefully overwintered stock plants. He was also fond of long yew hedges that he developed by taking numerous cuttings from just a few original shrubs in our yard. And, from time to time, both my grandmothers would propagate, via cuttings, house plants like geraniums, African violets, and Christmas cacti. But I think it was my dad's comparatively larger scale operation that fascinated me; with just a little effort, a single shrub could yield dozens of brand new plants—and, with just a little ingenuity, all these new plants would be created for free! I still take great pleasure in making new plants this way. This article focuses on propagation via cuttings of the VNPS 2014 Wildflower of the Year, *Lonicera sempervirens* (coral honeysuckle), a topic that, one might say, takes me back to my roots.

Coral honeysuckle, like all species of *Lonicera*, propagates easily by cuttings. In fact, a quick perusal of all our Wildflowers of the Year for the past 26 years suggests that it and partridge berry (*Mitchella repens*) are likely to be the easiest of the bunch to propagate this way. Although many stems of coral honeysuckle climb, this plant also produces stems that creep along the soil surface and, like those of partridge berry, these creeping stems spontaneously strike root at their nodes. No doubt, their natural tendency to form new roots explains their ease of propagation via cuttings. If you have just one vigorous specimen you should be able to start several new plants to increase your enjoyment of this excellent, colorful vine that will attract humming-birds to your yard. With a modicum of care, success should be guaranteed.

Perhaps the easiest and most straightforward technique for taking cuttings of coral honeysuckle is softwood stem tip cuttings. One should wait until the early spring flush of flowers has tapered off. Then—or anytime thereafter until, say, midsummer—the plant will make vigorous non-flowering branches appropriate for softwood cuttings. In this context, "softwood" refers to a particular developmental stage of growth in woody stems: the stem several inches below the shoot apex is no longer elongating and is becoming moderately stiff (stiffer than the immature tissues near the stem tip, but still more flexible than woody twigs one or more years old). Coral honeysuckles will make a few flowers periodically through the summer and it is recommended that branches selected for cuttings be growing vigorously with no sign of floral buds.



Softwood stem cuttings of coral honeysuckle. A. Vigorously growing stem tip severed from the parent plant. B. Same, after removal of leaves from lower nodes; this cutting is ready to be inserted into rooting medium. (Illustrations by Sheila M. Hayden)

Whenever such stems are present, softwood cuttings can be made by severing the stem just below a pair of leaves, yielding a tip cutting 3 to 6 inches long (Figure 1A). A clean cut made with a sharp knife or single-edge razor blade is better than a ragged wound. The lowest one or two pairs of leaves should be removed, again with a sharp, clean, cut (Figure 1B). Given the proclivity of honeysuckles to strike root, application of rooting hormones (more about this later) is optional. The cut end of the stem should then be inserted about one inch deep into a suitable container (flower pots or sturdy trays with drainage) containing moistened rooting medium. Appropriate rooting media include natural clean sand, coconut coir, and horticultural products like perlite, vermiculite, and rock wool. Two factors are critical regarding the rooting medium; it must hold sufficient water to keep the cut plant tissue well hydrated and, simultaneously, it must hold enough air that the stem and developing roots have sufficient oxygen to stay alive. The whole operation should be accomplished as quickly as possible to prevent wilting of the cuttings.

Once the cuttings have been inserted into the rooting medium, they just need time, moderately humid air, and moderately bright light in order to establish their new roots. As with so many other things in life, striking a good balance is important; bright sun and dry air will shrivel the cuttings in short order, and stagnant air with 100-percent humidity and dim light is a recipe for rot; some happy medium should be sought. A clear plastic cover that also allows a bit of ventilation can be helpful in maintaining humidity, and bright shade or very lightly dappled sunshine should be appropriate illumination.

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Rooting process remarkable

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Gentle bottom heat usually hastens the rooting of cuttings, but like everything else, this can be overdone to the detriment of your hoped-for plants. For easy-to-root honeysuckles, bottom heat can be omitted without qualm. Within a few weeks, you may see resumption of growth from the stem tips and, upon gently tugging the cutting's stem, you should feel a slight resistance to your pull, confirming that roots are present. Declare success, and put your newly rooted cuttings in appropriate-size pots with any good-quality potting soil mix, watering carefully when you are done.

Rooting cuttings is such a routine practice in horticulture that it is easy to forget how remarkable the process really is. Initially, the cutting consists of stem and leaf tissue, snatched from branch tips far removed from the parent plant's root system; nevertheless, the cutting's stems and leaves are able to generate, de novo, the missing organ. How do plants manage this remarkable feat?

To explain root formation on cuttings, one should first observe that not all plants have this capacity. Some, like coral honeysuckle, root easily, others strike root only if coaxed and coddled, and others are stubbornly recalcitrant in their disinclination to make new roots. But for those plants that do root easily, part of the process can be explained by the action of the plant hormone, auxin. In actively growing shoots, auxin molecules are synthesized by cells at the shoot tip (a shoot's apical meristem) and by vigorous, healthy, young leaves. Further, auxin tends to be transported basipetally, i.e., downward from shoot apex to root, through either the phloem or living parenchyma cells. This basipetal auxin flow controls multiple aspects of plant growth. In spring, the surge of auxin made by newly active shoot tips and expanding leaves is the signal for the vascular cambium to resume activity and to start making that year's increment of wood and inner bark. In many plants, the presence of auxin from an actively growing stem tip inhibits branch formation from lateral buds, a process called apical dominance. And auxin controls the bending of stems in response to both light and gravity. In the case of softwood stem cuttings, vigorous shoot tips of the severed cutting still produce auxin, which continues to flow basipetally, eventually building up abnormally high concentrations at the cutting's severed bottom end. This abnormally high auxin concentration is a signal to cells in that region to begin formation of one or more new root primordia. This is the reason that, in some plants, the application of a product that contains auxin can coax root formation.

In the case of honeysuckles, it has often been observed that preformed root initials can be present at the nodes of intact stems. It is as if new roots are "ready to go" before the cuttings are taken from the parent plant. One might postulate that the auxin concentration threshold for root formation in honeysuckle stems is very low, reflecting the proclivity of its trailing stems to root spontaneously, as noted above.

But it takes more than a hormonal signal to make a new root: living cells need to receive the signal and then respond to it. In honeysuckles, it is parenchyma cells of the leaf gap that respond by initiation of root growth. Normally these would-be mature cells are no longer undergoing cell division, but another response to auxin is the reversion of these mature leaf gap parenchyma cells to a meristem-like state, producing a cluster of rapidly dividing cells that eventually self-organizes as a root apical meristem. In other plants there may be different locations for new root initial formation, but it is always near the stem's vascular tissue. Some commonly noted-locations include between the xylem and phloem of a vascular bundle, completely within the phloem, or from the parenchyma cells between adjacent vascular bundles.

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Regardless of the details of how new roots form on cuttings, this mode of propagation yields new plants that are genetically identical to their parent. The new plants are, in fact, clones—and cloning is nothing new to botanists and horticulturists! Consequently, when (not if!) you successfully produce a dozen or so new coral honeysuckles from the same source, all will be exactly the same, genetically. This may not be the best situation if you wish your coral honeysuckles to produce fruit and seed to feed the likes of robins, goldfinches, and hermit thrushes. For many plants, cross-pollination between genetically different individuals often results in greater fertility than self-pollination does. But this is a problem that should be easy to solve: coordinate with your friends and trade your homegrown cuttings taken from different sources so that your garden plants will have some genetic diversity. You may well see more coral honeysuckle fruits if you do this.

On the other hand, if you wish to maintain a particular cultivar, for example, the yellow-flowered cultivar 'John Clayton,' clonal propagation via cuttings is essential. The unique combination of genes that defines

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the desirable characteristics of the cultivar are not likely to be maintained in the gene shuffling that occurs in pollen and ovule stages of sexual reproduction by seed.

Anyone with a fistful of dollars can go to a garden center and buy a plant—not that there is anything wrong with doing so. But those same dollars cannot buy the pride and satisfaction of propagating your own plants by your own hand, or the goodwill that comes from sharing your homegrown plants with others. It is more or less like parenting, all it takes is a little knowledge, a bit of care, and time to enjoy watching your little ones grow.

—W. John Hayden
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