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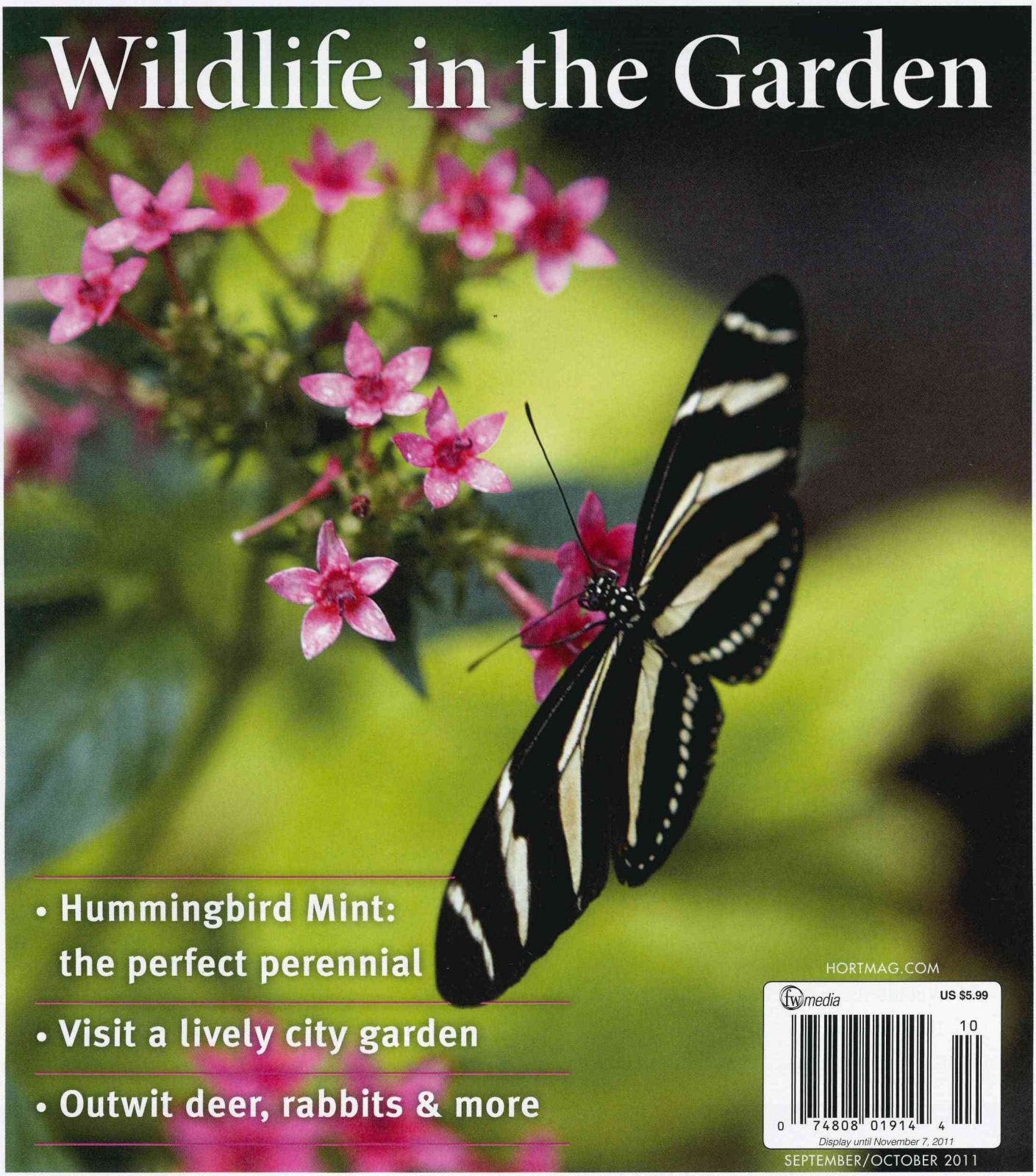

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sciencematters | *propagate like the pros*

Propagation success depends on using the best method for the plant. Purple smoketree grows by cuttings.

The seed of Japanese snowbell (*Styrax japonicus*) requires double stratification before it will germinate.

Kentucky coffeetree is a tough nut to crack. Professional propagators soak it in sulfuric acid before sowing.

It's the way we've always done it. The key to improving your success with propagation is to abandon this tired mentality; don't be afraid to experiment! Trial and error, and error during trials, is by far the best way to take your propagation skills to the next level. One never knows what's going to be the one step along the propagation process that turns a plant from a dog to a shinning star.

Whether plant reproduction is your hobby or your business, and whether you're using softwood cuttings, tissue culture, seed germination or any of the various other methods, every propagator shares one thing: We've all run into roadblocks. Perhaps you're dealing with a stubborn variety that gives poor takes on a consistent basis, or maybe you have a sudden crop failure with a plant that has propagated well for years. Well, we can tell you from experience—try, try again.

Let's consider seed propagation. It is used to produce large quantities of plants relatively inexpensively. In theory, it's not hard to reproduce plants from seed, but it does take patience, the willingness to manage cultural conditions and the knowledge of (or at least curiosity about) the unique germination needs of each plant type.

There are various forms of seed treatment: acid stratification, hot-water soaking, scarification and hot/cold stratification, be it natural or artificial. Add ambient conditions of light, humidity and temperature, and, well, you end up with a long laundry list of agents that affect how seed grows. These factors are only the tip of the iceberg, and they all apply to other methods of propagation, too.

JLPN is a wholesale nursery specializing in propagation. Some of the most successful accomplishments in the nursery have, believe it or not, come by accident. For instance, we watered seed trials to the point of flooding, but instead of a high mortality rate, we saw an increased germination of several varieties of alder! Quite simply, after analyzing the situation we found we typically kept the seed too dry. It needed more water—a lot more water, in fact.

We use acid scarring to get hard-coated seeds to germinate. A common practice is to throw away seed that doesn't swell. One year we decided to trial plant those seeds instead of tossing them out. The outcome was our best crop-take ever on several different type of seedlings!

Of course, success from error is not the norm. Ultimately you'd like to see your hard-earned results come from planned trials. For instance, pink-flowering styrax are easy to root, but transplant shock can result in a total crop failure. From experience, we knew root-

Trial and error is necessary. In the greenhouse, germination trials create consistent stands of European beech.

The delicate bells of *Styrax japonicus* 'Pink Chimes' make any difficulty in propagation worth the trouble.

ing them in potting soil under mist would be too wet and possibly cause rot. Rooting them directly into pumice (in the greenhouse floor) would mean death from transplant shock. So, just as roots were emerging in the mist cuttings in pumice flats, we transplanted them into a soil medium. Thus, the plants actually rooted into the plug of potting soil. The plugs themselves were eventually transplanted and experienced healthy growth.

Everyone can use a little guidance now and then. In today's world, the Internet can give quick and easy access to a multitude of propagation information. However, two reference manuals industry folk like us rely on are the *Manual of Woody Landscape Plants* by Michael A. Dirr and *The Reference Manual of Woody Plant Propagation, From Seed to Tissue Culture* by Michael A. Dirr and Charles W. Heuser, Jr. Consider adding these invaluable tools to your home horticultural library.

Probably the most crucial suggestion we can make is to keep notes of your trials and tribulations. Tracking your failures is just as essential as recording your successes. You might think you'll recall everything, but memories always fade with time. Having a detailed journal will help you find the mistakes in your propagation journey and come up with answers to go forward.

When navigating the road of plant propagation, avoid the sign that points toward Status Quo. Map out some detours and scenic routes. If you determine they're the best roads traveled, you can replicate them again and again.

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