

Horticultural News and Research Important to American Gardeners



Compact *Echinacea purpurea* 'Pica Bella' is a top performer.

NEW ECHINACEA EVALUATION FROM MT. CUBA CENTER

The Mt. Cuba Center in Hockessin, Delaware, has released the findings of an evaluation of 75 species and cultivars of coneflower (*Echinacea* spp.), including data on pollinator visitation. Coneflowers are increasingly popular among gardeners because of their showy, long-blooming daisy flowers and relative ease of cultivation, so Sam Hoadley, Mt. Cuba's manager of horticultural research, felt it was time for a new trial of species and cultivars. "It's important to decode the many echinacea cultivars offered and give people some direction of where to go to choose the best one for their gardens," says Hoadley. "In 2009 we released a report of 48 species and cultivars, but the marketplace has just exploded since then. It was time to capture a cross-section of the new colors and forms available now."

Twelve cultivars were deemed top performers, along with six honorable mentions. Top honors went to *Echinacea purpurea* 'Pica Bella', a compact selection with bright orange cones and hot pink flowers. Hoadley and volunteers also recorded visits by bees, wasps, butterflies, and other pollinators to judge which selections were preferred. "*Echinacea purpurea* got the most visits, but white-blooming cultivar 'Fragrant Angel' was second," reports Hoadley. The double-flowered cultivars received fewer pollinator visitors; thus, the top 12 selections are all single-flowered and include selections with pink, white, and orange petals. The study focused on plants that succeed in the Mid-Atlantic region, but will also do well across the U.S. The full report can be found on Mt. Cuba Center's website at <https://mtcubacenter.org/trials/echinacea-mid-atlantic-region>.

STICKY LEAVES AS A DEFENSE MECHANISM?

Many plants—petunias for example—have evolved sticky

leaves or stems. While stickiness in plants is found across many different ecosystems, it appears to be particularly common in sandy environments, so scientists sought to discover why. Studies indicate windblown sand tends to coat these sticky leaves, a phenomenon known as psammophory, which means "sand-carrying" in Greek. This likely offers dual benefits of protecting leaves from abrasion and reflecting light, thus reducing leaf temperature. The sandy coating may also defend plants against hungry leaf-eating predators like caterpillars. Eric LoPresti, an assistant professor at Oklahoma State University in Stillwater, and his team found that, when given a choice, caterpillars preferred to devour uncoated leaves. If sandy leaves were the only option, however, they were still eaten, but the caterpillar mandibles were noticeably worn down and their larvae grew more slowly, allowing the plant to continue to build resources from its tattered leaves. You can read more about LoPresti's research at www.ericflopresti.com.

BROOD X OF PERIODIC CICADAS EMERGES THIS SPRING

Brood X, or The Great Eastern Brood, is the largest and most extensive colony of periodic cicadas (*Magicicada septendecim*, *M. cassini*, and *M. septendecula*). This spring they are scheduled to emerge from their 17-year hibernation across the Northeast, Mid-Atlantic, and parts of the Midwest. These fascinating insects will appear around mid-May to fill the treetops with their loud mating calls that reach upwards of 100 decibels.



Despite their size and eerie red eyes, periodic cicadas are harmless.

The cicadas are due to emerge in parts of Delaware, Georgia, Illinois, Indiana, Kentucky, Maryland, Michigan, North Carolina, New Jersey, New York, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and Washington, DC for the first time since 2004. The timing of emergence is tied to soil temperature, as they require temperatures above 64 degrees Fahrenheit to become active.

Nymphs will emerge from the ground, molt into adults, mate, lay eggs, and then die. Eggs will hatch later in the season and nymphs will travel deep underground to attach to tree roots and hibernate for another 17 years. These cicadas do not feed on plants, but the females lay their eggs by inserting them under the bark of young twigs. Some branch dieback due to

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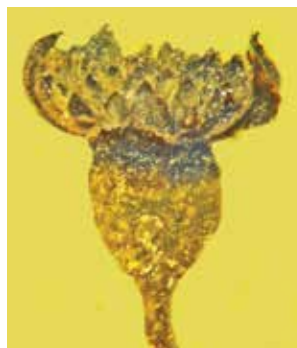
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girdled twigs caused by egg laying is common, and newly planted or small specimen trees with delicate branches may require protective netting. While cicadas can be annoying, they are not harmful and during the short period of their emergence they serve as an important food source for many kinds of wildlife. Discover more about these unusual insects at www.cicadamania.com and detailed maps of emergence at https://cicadas.uconn.edu/brood_10.

NEW 100-MILLION-YEAR-OLD FLOWER FOUND PRESERVED IN AMBER

A team of scientists from Oregon State University in Corvallis has identified a new genus and species of flowering plant



This tiny preserved flower dates to the Cretaceous period.

dating to the Cretaceous period found frozen in time in a chunk of Burmese amber. Named *Valviloculus pleristaminis*, the male flower has an egg-shaped, hollow floral cup with an outer layer of six tepals, and two-chambered anthers. The tiny flower is only about two millimeters across with some 50 stamens arranged in a spiral pointing upwards.

“This isn’t quite a Christmas flower, but it is a beauty, especially considering it was part of a forest that existed 100 million years ago,” says George Poinar Jr., professor emeritus in the OSU College of Science. It is one of the numerous angiosperms that have been discovered in Burmese amber. For more information, visit <https://today.oregonstate.edu/news/new-flower-100-million-years-ago-brings-fresh-holiday-beauty-2020>.

VENUS FLYTRAPS PRODUCE MEASURABLE MAGNETIC FIELDS

The carnivorous plant Venus flytrap (*Dionaea muscipula*) uses electric signals, known as action potentials, to close its leaf lobes around its prey. An interdisciplinary team of German scientists has now shown that these electrical signals also



The trapping action of Venus flytraps generates magnetic signals.

generate measurable magnetic fields. They used atomic magnetometers to record this example of biomagnetism, which is the detection of magnetic signals from living organisms. The researchers detected magnetic signals with an amplitude of up to 0.5 picotesla, which is similar to what is observed during surface measurements of nerve impulses in animals. Read more about this study at www.uni-mainz.de/presse/aktuell/13025_ENG_HTML.php.

NEW EXECUTIVE DIRECTOR OF THE PACIFIC HORTICULTURE SOCIETY



Sarah Beck has joined the Pacific Horticulture Society as its new executive director, leaving her previous position of director, programs & education, at the American Public Gardens Association (APGA). During her seven-year tenure with the APGA, Beck launched the Climate and Sustainability Alliance, led the pivot of the APGA's annual conference to a virtual format in 2020, guided federal grants programs and partnerships, and led a

fully remote team. In 2016, she received a Chanticleer Scholarship in Professional Development to complete a certificate in Nonprofit Management from Duke University's Office of Continuing Studies.

The Pacific Horticulture Society advocates for gardens and their power to enrich lives and heal the environment.

NEW EXECUTIVE DIRECTOR OF LEACH BOTANICAL GARDEN

Leach Botanical Garden in Portland, Oregon, has hired Mae Lin Plummer as its new executive director after David Porter



retired from the role. Previously, Plummer served as garden director at the Duke Mansion and filled several roles at the UNC-Charlotte Botanical Gardens, both in North Carolina. She recently completed the Longwood Fellows Program at Longwood Gardens in Pennsylvania. Prior to her roles in public gardens, Plummer spent nearly 20 years in the corporate financial industry before discovering her passion for horticulture.

Originally the estate of noted botanist Lilla Leach and her husband John, Leach Botanical Garden was left to the City of Portland and opened to the public in 1984. The Garden is home to more than 1,000 species of plants. Plummer will oversee its completion of the first phase of a five-acre expansion that will add accessible visitor facilities, a pollinator garden, an aerial tree walk, and more.

Written by Associate Editor Heather Prince.

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