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Arboretum Quarterly

For members of the Friends of the UCI Arboretum
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What's the Buzz? Pumice in Horticulture!

by Laura Lyons, Nursery Manager, UCI Arboretum

Pumice is a very curious type of rock. What other rock do you know that can float?

Pumice is of volcanic origin and forms under somewhat specific conditions. When lava that is rich in silica and dissolved gases is ejected violently from a volcano into the air, the molten rock can undergo rapid depressurization and rapid cooling as it flies through the air. Gases trapped in the lava expand rapidly, resulting in a very frothy mixture that hardens almost instantly. The resulting rock is both very porous but still surprisingly hard.

The pumice and other volcanic rocks formed by a large, violent eruption can be, quite literally, enough to bury a city. The cities of Pompeii and Herculaneum were entombed in ash and pumice during the notorious eruption of Vesuvius in AD 79. I had the pleasure of examining large beds of pumice and welded tuff—another volcanic rock, not used in horticulture—when I visited deposits from the eruption that created the Long Valley Caldera in the Mammoth region. Huge amounts of lava were ejected as part of this violent eruption and thick beds of pumice and welded tuff are beautifully exposed in a number of areas around the Owens gorge area. I found the rock very gritty and coarse to the touch.

Pumice has been used for millennia for a variety of purposes. Since ancient times it has been employed in construction activities, and continues to be utilized as a building material even today. It has been employed as an abrasive both for industrial and beauty purposes. However, it is its applications in horticulture that interests us today.

Pumice has been exploited by botanic gardens and savvy gardeners for quite some time, but its use is becoming much more mainstream, particularly in potting soil. Its highly porous na-

ture makes it a great component in potting soils. Pumice can absorb water and nutrients and then release them slowly to the soil as the surrounding medium dries, providing both moisture and food to the plant's roots. At the same time it is virtually impossible to supersaturate pumice, so it also retains air in the root zone and promotes gas exchange. In fact, one of the Arboretum's mixes for the most sensitive bulbs and succulents consists entirely of pumice mixed with oak leaf mold. The coarse nature of the pumice and its permeability make it an ideal medium for plants that are especially sensitive to overwatering.

Pumice is a popular component in hydroponics. It is often also used without other amendments as a cuttings substrate. I am currently experimenting with it in place of pure perlite with some very hard to root plants like *Leucospermums*.

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Boophane disticha growing in sandy pumice mix at the Arboretum.
Photo by Laura Lyons



Book Review: Wild and Beautiful - A Natural History of Open Spaces in Orange County

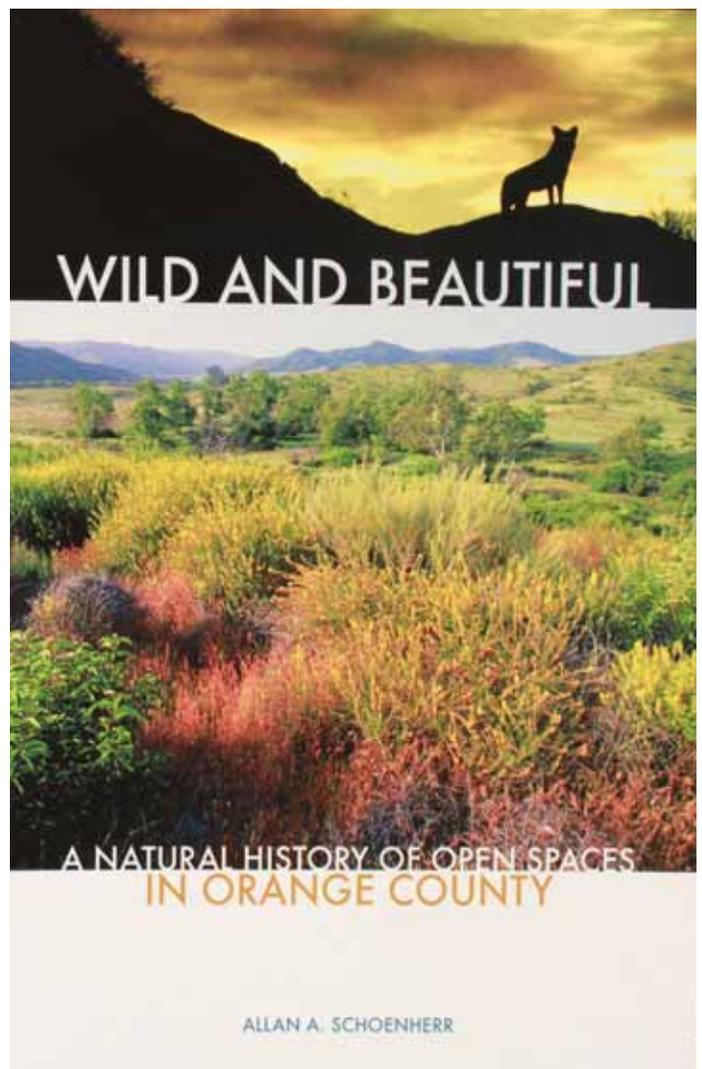
A fabulous book with literally hundreds of pictures and notes about our local native plants!

By Dr. Peter A. Bowler, UCI Arboretum and Herbarium Director

Allan A. Schoenherr. 2011. Laguna Wilderness Press. Laguna Beach, California. Paper. 217 + xiii pages. 10-digit ISBN: 0972854495. 13-digit ISBN: 978-0-9728544-9-8. \$24.95.

Although there are numerous books with photographs and narratives regarding southern California's natural areas, Allan Schoenherr's latest treatment of Orange County open spaces is an amazingly informative breath of fresh air that provides a unique insight into our local natural heritage. Schoenherr is perhaps best known for his books published by the University of California Press including "A Natural History of California," and "Natural History of the Islands of California." His latest, a treatment of Orange County's natural history, is absolutely superb. It provides insights and original interpretations of fundamental ecological principles in our area, while giving the reader a hands-on feel for our habitats and local plant species. The 346 photographs and illustrations are of extraordinary quality, and Schoenherr does a very good job of describing the County's keystone, dramatic vascular plants and where they fit within our local ecology. He also provides maps and directions to our open space areas, which is a big help in discovering how to access them and the role each plays in the bigger picture of open space linkages and context in the County.

Orange County's principle habitat types including coastal sage scrub, chaparral, valley or coastal grassland, southern oak woodland, and riparian woodland, are clearly described and the associated lovely color photographs make them come to life. In addition to the flora, the book also brings forward the fauna, and our local geology is made readily comprehensible through concise descriptions and easy to visualize figures. All told, the book presents the best reader-friendly interpretation of our area that has been compiled, and I whole-heartedly recommend it to all audiences. It is written in a way that is





inviting and readily understandable for anyone interested in the outdoors, plants, animals, geology and habitats of the County's open spaces. The reference section includes a list of an additional forty-two books that the truly dedicated can explore. Because of its clarity and the reader-friendly approach taken in the book, I have no doubt that it will be used by classes ranging from high school to college, in addition to being a critical component of local natural history guides.

I cannot recommend "Wild and Beautiful" more strongly, and believe it to be an enjoyable and classic complement to any Orange County plant enthusiast's library.

The non-profit publisher, Laguna Wilderness Press, describes the book as follows:

"Explore the paths and trails of Southern California's wildlife in reading *Wild and Beautiful: A Natural History of the Open Spaces in Orange County*, by Dr. Allan A. Schoenherr. Provided in this book is an abundance of illuminating information about what can be

glimpsed from the creatures, plants, habitats, and landscapes that constitute the open spaces in Orange County. This book highlights an impressive array of information and photographs that creates a resource valuable to both the reader in the comfort of their home and the hiker ascending up the trail. You will be hard-pressed to find another book that is such a wonderful blend of incredible photography and informative material."

Wild and Beautiful is available at the Nix Center in Laguna Canyon, Latitude 33 Bookstore in Laguna Beach, and may be ordered through any bookstore. The book is also available from the Laguna Wilderness Press directly at their website: Lagunawildernesspress.com. Their mailing address is: PO Box 149, Laguna Beach, CA 92652. There is an excellent interview by Pat Brennan with Allan Schoenherr about this book in The Orange County Register, available online at <http://sciencedude.ocregister.com/2011/02/17/wild-beautiful-and-very-o-c/121675/>.

Electronic services for Members

Members of the Friends of the UCI Arboretum have the option of receiving information on upcoming events via e-mail rather than by US mail.

Subscribing to the Friends event list assures you of the most up to date information on upcoming events and classes - and saves valuable resources by eliminating paper mailings. Instead of a postcard you receive a detailed text message and a PDF copy of the event flyer, plus an update message 1 week prior to event, if appropriate.

To subscribe to the Event List, please send an email to ldlyons@uci.edu with the subject line "Friends Event List." In the body of the email please include the names of the member(s) subscribing as it appears on your mailing label and your full email address .

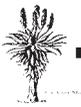
Electronic Quarterly (PDFQ)

Members also have the option to receive their Arboretum Quarterly in Adobe PDF format.

The PDFQ features color pictures and graphics rather than the black and white of the printed Quarterly, an extra 'photo gallery,' and other enhanced content.

To subscribe to the PDFQ list, please send an email to ldlyons@uci.edu with the subject line "PDFQ List." In the body of the email please include the names of the members subscribing as it appears on your mailing label and your full email address.

Each list is completely separate. If you want both your Quarterly and Event notices via PDF, you need to subscribe to both lists. Or you can choose to subscribe to only one.



Notes from the Nursery, early Spring, 2011

By Laura Lyons, Nursery Manager, UCI Arboretum

Spring is always a wonderful time of year in our gardens, and the recent rainfall has brought out the very best flower show possible.

In our Nursery, the staff has been busy working with a variety of new plants to introduce at our spring sales. Here are just a few of the beautiful plants you can expect at our upcoming sales.

Dudleya is an interesting genus of succulents native primarily to California, with some species ranging into Arizona and Baja. Often known as "chalk plants" due to their silvery foliage, they also are known as "live-forevers" due to their long lifespan (some individuals have been documented to live over 100 years).

A member of the Crassulaceae, they were once included in *Echeveria*, but were assigned their own genus many years ago. More recent DNA studies indicate that the two genera are not that closely related, despite the similarity in appearance, flowering habit and the marginal geographic proximity of the two plants (the northern range of *Echeveria* and the southern range of some *Dudleya* overlap). Also, the culture is rather different – *Dudleyas* prefer to be (relatively) wet in the winter and dry in the summer, while *Echeveria* prefers the opposite.

Dudleyas can be broadly divided into the "finger" Dudleyas and the "rosette" Dudleyas with the latter being more popular with gardeners. We have three excellent rosette Dudleyas right now- *Dudleya pulverulenta*, *D. virens* ssp. *hassei* (formerly known as *Dudleya hassei*), and *D. brittonii*, green form (pictured below)



All three species grow 6-12" tall and 12-18" wide, and prefer part shade to full sun. Good drainage is a must, especially in the garden.

The former two species are both silver-leaved, while the latter is more green. *Dudleya virens* ssp. *hassei*, known as the Catalina Island live forever, is found only on the Channel Islands. It has very slender-leaved rosettes. *Dudleya pulverulenta* has beautiful silver rosettes and pale yellow blooms. This species has a much more extensive range, being found through most of Northern and Central California, excluding the Central Valley.

Dudleya brittonii is a Baja California species, similar in appearance and cultivation to *Dudleya pulverulenta*.

Continuing with the family Crassulaceae, we have two new members of the genus *Crassula* in the nursery right now. The first is a variation on an old friend – the hardy and redoubtable Jade plant. Specifically, it a variegated form of that old garden favorite, *Crassula ovate veriegata*.

Like the classical Jade plant, this succulent is a low shrub, reaching 2-3 ft tall and wide.

Crassula pubescens, by contrast, is a low-growing plant with small, tubular leaves that redden in the sunlight, making this a very colorful succulent. As its species name would imply, the leaves are covered with short, erect hairs, giving the plant a "furry" appearance. The plant grows 4-6 inches tall and 6-12 inches wide. Several of the volunteers have enquired rather eagerly when it's going to be released, so I think this one is going to be a winner.

Huchera, also known as coral bells, is an interesting California native species that naturally features a number of different foliage colors and patterned foliage.

Hybridizers have worked with these plants quite a lot in the last few years, and there are some really stunning colors that have debuted recently. When you're working to create an interesting garden, foliage colors create an interesting accent that will always be present. Flowers, I tell my students, are transient; foliage lasts forever.

We have an interesting new variety of *Huchera* in the nursery this year, called "Amethyst Mist." It's a rich dark purple with contrasting silvery veins. We also have some very young "Peach Melba" for early this summer – a lovely orange peach.

Hucheras require bright shade or perhaps just a touch of morning sun, and require average water – they are not as drought tolerant as some California Natives, though they



are far less water-demanding than the average lawn! They grow about 1 ft. tall and wide and bloom in springtime.

Back in stock

We have several items back in stock for the spring. One of the most notable is the Royal Sage, *Salvia coahuilensis*. This low growing *Salvia* has soft green foliage and stunning royal purple flowers repeatedly during warm weather. It grows a modest 12-18" tall and spreads to 3 ft. Like most sages, it prefers full sun.

Also back in stock is *Aeonium "Kiwi."* Yet another succulent with colorful foliage, this low growing plant features green and white variegated rosettes. It is perfect for morning sun and also does well in full sun. Grows 2-3 ft tall and wide.

A second popular item now back in stock is *Arctotis "Burgundy."* This evergreen perennial has silvery foliage that are a wonderful contrast to the burgundy flowers. It forms a low growing mat up to 3 ft across and prefers full sun.

Of course this is only a small sample of the plants we have at our sales, and there are many other specialty items

that may only crop up in small quantities and be offered at a sale. With so many rare and unique items in our nursery it's always an adventure to see what crops up for each sale, particularly this spring. The ample rainfall is always good for the plants, particularly bulbs, and can bring some very unique items into bloom – hopefully just in time for a given sale! Our sales staff always gets a briefing about these gems before each sale so don't hesitate to ask.



UCI Arboretum presents
"April Showers of Flowers"
Saturday, April 9
9 a.m. to 4 p.m.

Unique selection of spring perennials, blooming bulbs, succulents,
and much more

Expert advice on selection and care

Visit our gardens in peak bloom

Admission and parking FREE

For more information call (949) 824-5833



Pumice in Horticulture, continued

Perlite is very similar to pumice at first glance, and of course, has been used in horticulture even longer than pumice, especially as a component of potting soils. However, it is important to note that perlite only absorbs water and nutrients on the surface – the inner part is impermeable. Hence, it is usually used as a much finer material than pumice.

Perlite also has a volcanic origin. It originates from a volcanic rock of the same name, a rock that is very rich in water. When ground and then heated, the water content causes the perlite to puff up like popcorn, creating a very porous substance.

It is also much less durable than pumice. I can crush a piece of perlite into powder with my fingers, but just try that with pumice! On the flip side, perlite is much lighter and

easier to handle – pumice may be a very light rock, but it's still rock!

In conclusion, pumice is a flexible tool in a gardener's repertoire. It is a valuable component of potting soils, or it can be used as the major component of certain very specialized soils. It also has utility in the propagation of cuttings and in hydroponics. Its porous nature greatly improves retention of water and nutrient retention and promotes gas exchange in a plant's root zone. If you haven't tried this versatile material, give it a spin!



Arboretum soil mixes utilizing pumice include;

Sandy pumice Mix

- 3 parts sand
- 2 parts peat moss
- 2 parts redwood compost
- 2 parts pumice

Desert Mix

- 1 part sand
- 1 part peat moss
- 1 part redwood compost
- 1 part oak leaf mold
- 2 part pumice

Special succulent mix

- 4 parts pumice
- 2 parts Oak Leaf Mold

Arboretum Calendar Spring Perennial Sale

May 21 10 a.m. to 4 p.m.

Friends preview 9 a.m. Saturday

May 22 11 a.m. to 3 p.m.

May 30 - Memorial Day
Arboretum Closed

"June gloom? No, June Bloom!"

June Bloom Plant Sale

June 11 9 a.m. to 3 p.m.

New Volunteer Orientation
June 18, 10 a.m.