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November 14 program:

Donald Leopold on 'Native Plants for the Naturalistic Garden'

Our November 14 program will feature Donald Leopold, professor at the SUNY College of Environmental Science and Forestry and author of the Timber Press book, *Native Plants of the Northeast*. Leopold will speak on "Native Plants for the Naturalistic Garden."

The meeting will be held at the **Kenneth Post Lab** on the Cornell University campus – brown bag lunch at noon with the program beginning at 1 p.m.

Leopold has been studying native plants for nearly 30 years. He joined the faculty at SUNY-ESF in 1985, where he has taught courses in dendrology, plant materials, freshwater wetland ecology, and numerous graduate seminars on conservation and restoration topics. He has published over 50 peer-reviewed papers, four other books, six book chapters, five book reviews, three proceedings, and many miscellaneous publications, all generally about topics in forest and wetland ecology.



If you are not familiar with this meeting location, the Kenneth Post Lab is a greenhouse facility just east of the intersection of Tower Rd. and Judd Falls Rd. The classroom is at the north end of the greenhouse complex, across the hall from the 'headhouse' where we sometimes have hands-on activities.

Books available at Nov. 14 program

From Carol Eicher: I've ordered through Timber Press eight copies of Don Leopold's book *Native Plants of the Northeast* as well as 8 copies of the book *Primulas* by John Richards. It should go without saying why I've ordered Leopold's book. At the meeting he will gladly sign your book (new or old). After last month's program I thought there might be interest from the membership in the primulas book, as well. We'll be selling both books at a deep discount off

retail price (exact price to be determined based on our cost). Normally both books sell for \$39.95. Anyone wanting to reserve a copy in advance can contact me at ceichler@twcny.rr.com.

NARGS Seed Exchange

From Craig Cramer: One of the prime benefits for me of membership in 'National NARGS' is the privilege of participating in the annual Seed Exchange. Members contribute seeds from thousands of species and varieties. For a mere \$15 (beyond the \$30 NARGS membership fee), you get to choose 25 you'd like to try to grow.

This year, the Seed List will be put on the NARGS website on December 15. (www.nargs.org, click on Seed Exchange.) Only members who request a print copy because of no- or slow-internet connection will have the Seed List mailed to them. To request a print copy, contact the Seed Exchange Director by December 1: Joyce Fingerut, 537 Taugwonk Road, Stonington, CT 06378-1805 or alpinegarden@comcast.net

Our chapter has agreed to coordinate the Surplus Seed round of the NARGS Seed Exchange again this year. The process should be less hectic than last year, as more people adjust to the web-only seed list and get their orders in for the first round. BZ Marranta has agreed to be overall coordinator, and we hope to have weekly coordinators as well to share some of the work. For national NARGS members, the incentives include getting "donor status" on the next year's exchange (10 more packets + priority order filling) and the ability to choose your own surplus seed purchase. The chapter is looking at several incentives for local members who are not national members, so that everyone will want to help. Look for details around February, as the work will take place throughout March. If you have questions or want sign on as one of the weekly coordinators, contact BZ Marranta: mmm10@cornell.edu.

Deer Fortress

From Carol Eichler: My fall anemones have never looked so great! In spite of the fact that I grow them near the house, the deer are bold enough (as you all know) to enjoy them as a snack just when the plants begin to flower.

This year, after the first early nibbles (earlier would have been better), I hung out a product called Deer Fortress. You'll notice in the picture I used ski poles located about every 6 to 8 feet because I needed the Deer Fortress's small cylindrical canisters to be located at about flower height.

You can see for yourself that Deer Fortress ended my deer dilemma. The really nice thing about this product - besides its effectiveness - is that they last a whole season. No need to reapply. I use them elsewhere in my garden as well.



Yes, they are available locally or by mail order. This is my second year using them. I'm curious as to whether other members are familiar with this product and if they've had equal success.

From the Wine-dark Sea to the Olympian Heights: Plant-hunting in Greece

by Nicholas Turland, Associate Curator, Division of Science & Conservation, Missouri Botanical Garden, St. Louis, Mo. Contact: nicholas.turland@mobot.org

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We start our journey by the Mediterranean Sea, on the island of Crete, the largest of the Greek islands and close to the most southerly point in Europe. Here the coastal areas harbor many bulbous, cormous, and tuberous plants (geophytes) to entice the rock gardener. Common spring-flowering plants include *Fritillaria messanensis*, *Tulipa cretica*, various species of *Allium*, *Gagea*, *Muscari*, and *Ornithogalum*, as well as numerous orchids. Much more localized are *Arum purpureospathum*, *Tulipa goulimy*, and at least four species of *Bellevalia*. Because this is a typically Mediterranean climate, with almost total drought from June through September, all these geophytes die back to their underground storage organs in the summer. The start of the rainy season is heralded by autumn-flowering geophytes such as *Colchicum pusillum*, *Crocus laevigatus*, *Narcissus serotinus*, and *Prospero autumnale* (*Scilla autumnalis*). Plant growth continues throughout the winter, with a few species flowering only in December and January, e.g., *Androcymbium rechingeri*, a white-flowered relative of *Colchicum*.

At medium elevations, in the hill country of Crete below about 2000 feet, we find more geophytes, such as the yellow-flowered *Arum creticum*, the sinister dark purple *Dracunculus vulgaris*, or its rare white-spathed form, and, in autumn, the truly bizarre *Biarum davisii*. Here in the hill country, wet meadows in poorly drained plains can support drifts of sweetly scented *Narcissus tazetta*, while the now very rare traditionally cultivated fields have a rich weed flora of annuals and geophytes, the latter including white *Ornithogalum nutans*, red *Tulipa doerfleri*, pink *T. saxatilis*, and the pyramidal masses of yellow flowers of *Leontice leontopetalum*, a tuberous member of the *Berberis* family. In woodlands, you might be lucky enough to encounter *Paeonia clusii*, the voluptuous white peony endemic to Crete and nearby Karpathos (i.e., it occurs nowhere else).



Biarum davisii

The high mountains of Crete are unique in the Greek islands in rising to over 8000 feet. There are three massifs: the Lefka Ori or White Mountains in the west, Psiloritis or Ida in the center, and Dikti in the east. These mountains retain large tracts of rather open forest composed mainly of kermes oak (*Quercus coccifera*), maple (*Acer sempervirens*), cypress (*Cupressus sempervirens*), and Calabrian pine (*Pinus halepensis* subsp. *brutia*). The timberline is at about 5500 feet, above which we find no verdant alpine pastures but rather a harsh wilderness of pale limestone rocks with no surface water. At first sight it appears completely devoid of life, like a moonscape, but closer inspection reveals a wealth of plants



Paeonia clusii

hugging the ground, tucked in among rocks or inside spiny dwarf shrubs, or on vertical cliff faces. There are many Cretan endemic species in these high mountains, some even endemic to a single massif, especially in the Lefka Ori. The whole area is heavily grazed by sheep and goats, which has a profound

effect on the plant life and probably partly explains the moonscape effect. The plants have to keep a very low profile in order to escape terminal damage from grazing, or they have to grow out of reach on cliffs.

The high mountains are covered in snow in winter. As temperatures rise in spring, there appear vast numbers of the endemic *Crocus sieberi* subsp. *sieberi* and *Scilla nana* (*Chionodoxa nana*), the two commonest snow-melt bulbs. In smaller numbers you might find the tiny endemic *Corydalis uniflora*, and, after all the snow has melted, *Arum idaeum*, with its white spathe and black-purple spadix. There are also a few autumn-flowering geophytes, such as *Crocus oreocreticus*, a mountain relative of the lowland *C. cartwrightianus*, itself probably an ancestor of the cultivated saffron crocus (*C. sativus*).

On high-mountain slopes and screes in the Lefka Ori the following species are endemic, i.e., unique to this single massif: *Alyssum fragillimum*, *A. sphacioticum*, *Anchusa cespitosa*, *Centranthus sieberi*, *Clematis elisabethae-carolae*, *Cyanus* (*Centaurea*) *balduccii*, *Cynoglossum sphacioticum*, *Euphorbia rechingeri*, *Hypericum kelleri*, *Myosotis solange*, *Nepeta sphaciotica*, and *Noccaea zaffranii*. Among these, *Anchusa cespitosa* is the most conspicuous, with its hard flat mats of leaf rosettes studded with brilliant blue flowers.



Anchusa cespitosa

On shady cliffs in one very remote place in the heart of the Lefka Ori grows *Anthemis samariensis*, discovered in 2007 and described as a species new to science in 2008. It forms grey-green shrublets up to about 18 inches across with profuse typical chamomile flower heads in summer, with central yellow disk-florets surrounded by petal-like white ray-florets. In the same habitat nearby grows another Lefka Ori endemic, *Onobrychis sphaciotica*, with showy bright purple flowers.

If we now continue our journey northward, across some 60 miles of sea, we come to the Peloponnese. This is the southern part of mainland Greece and technically an island, about 150 miles long by 100 miles wide, separated from the rest of mainland Greece by the man-made Corinth Canal. The high mountains here are nearly as tall as those in Crete, reaching almost 7900 feet on Mt. Taigetos in the south. These mountains have a higher rainfall than those in Crete, and often a different geology, with water-impermeable schist as well as limestone, which results in more surface water. The forest on the lower slopes is much denser than that in Crete and dominated by Greek fir (*Abies cephalonica*) and black pine (*Pinus nigra*). Superb forest species include the vivid purple-flowered *Cyclamen rhodium* subsp. *viduum*, the white-flowered *Paeonia mascula* subsp. *hellenica* (on Mt. Taigetos), and a deep orange Turk's-cap lily, *Lilium chalcedonicum*.



Lilium chalcedonicum

Above the forest, the landscape is a mass of rocks, but there are grassy areas too. There are snow-melt geophytes in spring, including two races of *Crocus sieberi*: subsp. *nivalis* on Mt. Taigetos and subsp. *sublimis* in the northern Peloponnese. The highest grassy slopes of Mt. Taigetos are scattered with the bright yellow flowers of *Viola sfikasiana* in early summer. Where snow patches persist late, you might find the yellow-flowered flat rosettes of *Verbascum acaule*. On one high pass, where the rock is schistose, there are hundreds of cushions of *Dianthus androsaceus*, with nearby springs supporting neat "lawns" of cow-grazed grass studded with the tiny violet-blue flowers of *Campanula radicata*. Also on Taigetos is the extremely rare *Campanula papillosa*, which was discovered in 1906, described as a new species in 1908, but apparently not seen again until exactly a century later, when a friend and I found it in a single rocky corrie on the east side of the main ridge.

Our journey will end on Mt. Olympus, 130 miles north of the Peloponnese, near the Aegean coast of northern Greece. Olympus, the mythical home of the gods, is the highest mountain in Greece, at 9571 feet. The lower slopes have different zones of forest, showing a gradual elevational change from Mediterranean sclerophyll forest dominated by kermes oak (*Quercus coccifera*), to mixed forests of black pine (*Pinus nigra*), Macedonian fir (*Abies borisii-regis*), and beech (*Fagus sylvatica*), finally to a mountain conifer forest dominated by Bosnian pine (*Pinus heldreichii*). Above the trees, which extend up the eastern slopes to about 6500 feet, are grassy pastures, patches of low juniper scrub, rocky slopes, scree, steep cliffs, and a remarkable flat plain at 8500 feet called the Plateau of the Muses. There are about 50 species endemic to Olympus, more local endemics than any other mountain in Greece.

Rock faces in the forest zone of Olympus are home to one of the mountain's most famous endemics: *Jankaea heldreichii*, a member of the largely tropical African violet family (Gesneriaceae). In the whole of Europe there are only four other members of this family: *Ramonda myconi* in the Pyrenees (France and Spain), and *R. serbica*, *R. nathaliae*, and *Haberlea rhodopensis* in the Balkan peninsula, including northern Greece. *Jankaea heldreichii* is a really beautiful plant with neat rosettes of dark green leaves, covered with silky white hairs above and dense rusty brown hairs beneath, and clusters of trumpet-shaped lilac flowers.

Above the forest zone rocky gullies shelter drifts of yellow *Doronicum columnae* and purple *Geranium macrorrhizum*, the latter with its characteristically musky-scented leaves. Here you might be lucky and find the odd plant of *Aquilegia ottonis* subsp. *amaliae*. On rocky slopes the endemic, silver-leaved *Potentilla deorum* is frequent, while on rock faces the endemic *Campanula oreadum* forms conspicuous blue patches. On the Plateau of the Muses, the ground is subject to solifluction, the sorting of stones and soil particles into stripes and polygonal patterns by the action of freezing and thawing. The vegetation is mainly grasses, with abundant *Lotus alpinus* in places and a few plants of the brilliant blue *Gentiana verna* subsp. *balcanica*. The final approach to the summits of Olympus involves climbing vertical cliffs or steep gullies. The easiest route requires no climbing equipment, but you need a head for heights. It is a broad gully with 6-inch-wide rock-ledge steps scattered with loose gravel. If you were to fall, you might tumble down several hundred feet. Beyond the highest summit, Mitikas, is a slightly lower summit, Stefani, the Throne of Zeus, separated by a knife-edge ridge with an almost vertical drop of several hundred feet on both sides. Among these high summits grows the endemic *Cerastium theophrasti*, a small rock-crevice alpine with rather showy (for a *Cerastium*) white flowers.

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