



Newsletter

North American Rock Garden Society
Berkshire Chapter June 2009

Next Meeting

Saturday, July 18 at 10:30 AM

Berkshire Botanical Garden Exhibit Hall,
located 2 miles west of Stockbridge MA at the
junction of Routes 102 & 183

Chapter Business: Show & Tell, Ask The
Expert, and any other relevant or irrelevant
activities, as long as they are interesting.

Morning Program

Joe Strauch

Gardens Far and Near

This will be a whirlwind tour of 5 gardens as far
away as the South Island of New Zealand to a
beauty in Lenox, MA. He'll show slides of some
of the treasures he's encountered during his
years of taking pictures of the gardens he's
visited. The gardeners include Maria Galletti,
Dick Redfield, Orlan Gaeddert, Vicky Merton
and Francie Herlund.

Joe has been a professional photographer since
1990. He regularly contributes photos to *The
American Gardener* and *The Nativeplants
Journal*. His photos appear in Audubon Society
Fieldguide to American Wildflowers, *Eastern
and Western Regions*, Wildflowers of the
Smokies, Native Alternatives to Invasive Plants
and numerous other books and magazines. He is
the author of Wildflowers of The Berkshire and
Taconic Hills. And, most importantly, he's a
member of our chapter and a good friend to
many of our members.

**In the PM, members only are invited to
visit a VERY beautiful garden in Canaan,**

NY

Chairman's Message:

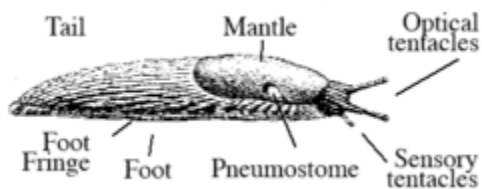
We are familiar with specific words for
groups of individuals of a like kind e.g., a
gaggle of geese and a pride of lions. Other
terms may be less well known such as a
rangale of deer, a parliament of owls, an
escargatoire of snails (Spell Check just went
nuts). My personal favorites are a bloat of
hippopotamuses and a gulp of swallows. For
those who have ever heard the term
escargatoire of snails, it probably conjured
up land snails with shells. I propose a term
to honor their shell-less brethren, the slugs:
a slime of slugs. These unsung garden pests
have certainly made their presence felt this
growing season. There is almost as much
damage to my hostas this year as caused by
deer in the past. Slugs slime their way (it's a
verb too) on to the adaxial surface of the
petiole and excavate the tissue weakening
the petiole so that the weight of the blade
causes it to collapse. Unlike deer damage,
however, the flattened blade continues to
function.

Slugs belong to the Class Gastropoda, a
large group within the Phylum Mollusca.
Gastropods typically have a coiled shell and
exhibit the phenomenon of torsion during
development. Torsion occurs when the
bilateral larva or embryo, with a mouth at
one end and an anus at the other, undergoes
a twisting of 180 degrees so the gut takes a
"U" shape and the anal opening lies on the
right side near the anterior end. Despite
lacking a shell, slugs undergo torsion so the
anus is in the anterior half rather than at the
end of the worm-like body.

As in other gastropods, slugs have a well-developed head, which, in addition to the mouth, bears two pairs of highly motile tentacles. The upper pair bears an eye at the end of each consisting of a lens and a light sensitive retina. The eyes respond to changes in light intensity (shadows). The lower tentacles appear to function as chemical (taste) receptors. Slugs feed using a radula, a feature unique to molluscs. The radula consists of longitudinal rows of minute, backward facing teeth and is moved to rasp plant material. Large salivary glands secrete into the mouth cavity where digestion begins.



Most aquatic gastropods have gills for gas exchange. The gills lie in the mantle cavity, the space between the body wall and the mantle. The mantle is the organ which secretes the shell. Although slugs lack a shell they do have a mantle and a mantle cavity located on the dorsum behind the head. The roof of the mantle cavity is highly vascularized and functions as a lung. The mantle cavity is sealed except for a small opening on the right side, the pneumostome, through which air is moved into and out of the mantle cavity.



Shelled pulmonate snails have a fossil record dating back to the Carboniferous Period (360-286 mya). “Slugginess” occurs in

a number of families of pulmonates and thus, appears to have evolved more than once in response to low calcium levels in their environment. Their centers of distribution are areas of high humidity and soils of low pH or low calcium. They have been unintentionally, but successfully, introduced into many parts of the world e.g., Maine hosts 14 species of slugs of which 11 are non-native. The most common species in my garden is the introduced European dusky slug, *Arion subfuscus*, which was first observed in the Boston area in 1841. It is the only slug to secrete yellow mucus.

Who would think that any group of creatures could be dependent for their existence on mucus? Slugs are. Because slugs lack a shell, they are subject to desiccation through their body wall. To reduce water loss by evaporation, the skin has many mucous glands that coat the entire body with a layer of slime. Although toads, garter snakes and shrews (and hedgehogs) eat slugs, slugs defend themselves when disturbed by compressing their body into a more rounded shape thus making them very slippery and difficult for the predators (and gardeners) to handle. Slugs locomote by means of wave-like contractions of the large, ventral muscular foot. Laying a slime trail from a large mucous gland located behind the mouth facilitates movement by lubricating the slug’s path. The mucus also protects from mechanical tissue damage as the slug moves over a rough surface. Slugs locate prospective mates by following the slime trails of other individuals. Mucus also plays a role in mating (see below).

Slugs are notorious for bizarre sex! They are cross-fertilizing hermaphrodites i.e., individuals produce both eggs and sperm in a single ovotestis but mate to exchange sperm to fertilize each other’s eggs. *Limax maximum* is a sexual weirdo introduced

from Europe. It was first noted in Philadelphia in 1867 and by 1904 had spread to Saratoga County, New York. As



its common name, the giant garden slug, and the specific epithet *maximum* (by Linneaus, 1758) indicate, it is large reaching up to 8 inches long when fully extended.

Fortunately for rock gardeners this slug prefers fields and vegetable gardens. Even though individuals are hermaphroditic, some individuals exhibit male-like behavior and other female-like behavior (as interpreted by the human observer and not necessarily the way the slugs see it). A male behaving individual (mbi) when crossing the slime trail of another individual will follow the trail in hot pursuit. I presume it can somehow determine the proper direction to follow. If the second slug is also an mbi, it will vigorously wag its tail and break contact with the pursuing mbi and their slime trails diverge. If the second slug is a female behaving individual (fbi), it leads the mbi up a tree or wall to an overhang where they mouth each other's tail and move around in a tight circle forming an "O" shaped slime trail. The circle movement is always clockwise thus allowing their genital opening on the right side to properly align for mating. After circling for about an hour and laying down a thick "O" of slime, the fbi separates its anterior end from the slime trail and hangs from the mucus by its tail. The mbi does likewise and their bodies entwine. They then detach together from the

overhang each pulling a string of mucus from the thick "O" ring of slime. They slowly descend 6 to 12 inches, head first, remaining attached to the mucus string by their tail. The dangling entwined couple slowly rotate twisting their mucus strings together. Now the real action begins! While dangling and rotating, each everts its penis out the genital opening. The penis is impressive. It is motile and 1 ½ inches long or 1/3 of the total body length! They entwine their penises in a tight coil. Each penis is whitish when first everted, but turns a translucent blue when entwined. Seminal fluid containing sperm is pumped to the end



of the penis which then moves to place this material at the end of the other's penis and thus, sperm is exchanged. They un-entwine their penises and each is withdrawn back into the body thus introducing their partner's sperm into their reproductive tract. I would think that some of an individual's own sperm would go along too. The eggs are fertilized within the reproductive tract. The slime-crossed lovers separate and depart either by reaching out and contacting a wall or tree trunk or climbing up the twisted mucus string to the "O" ring. And thus, another generation of slugs to feed.

Cliff Desch

Porcupine Saddle

I don't know how Stephanie Ferguson persuaded me to do a tufa planting/trough planting/plant sale for the Calgary Rock and Alpine Garden Society – I must learn to say no. It was a surreal drive across the mid-continent, somewhat like Napoleon's retreat from Moscow - with plants, 600 pots and 16 baskets of rooted cuttings! Three days and 2500 miles we were in Cochrane, AB ready to set up. Albertans, like gardeners everywhere, complain about their climate as being too extreme – so extreme that they easily grow a lot of sensitive things with ease; i.e., *Eritrichium spp.*, *Paraquilegia grandiflora*, *Daphne jasminea*, *Meconopsis betonicifolia*, *Penstemon debilis* – an easterner can quickly develop a severe case of envy and hatred. Oh, did I mention the easy access to tufa? The workshops/sale went off just like a children's birthday party. Most of the plants were gone, to my relief.

We decided to move on and travel further south, as late June was too early for the northern mountains; so, we set out for the Bitterroots. We picked up maps and info at the Stevensville, MT Forest service office



E. caespitosus x e. rhydbergii

for the trail to St. Mary's Peak – I wanted to see a curious *Erigeron* hybrid we grow from a collection made there by Betty Lowry. It is

thought to be *E. caespitosus x e. rhydbergii* and is so compact and attractive that Josef Halda remarked, "It's the best one". High praise indeed for an *erigeron*. It is a fertile hybrid and the seedlings germinate and grow quite true to form. We drove in ~ 18 miles to the trailhead. The road, climbs steadily to ~ 6800'. It was evening already, so we camped in the small parking area. The trail to the lookout is ~ 4.5 miles and rises to ~ 8500', moderately strenuous, but not difficult. We hit a large snowfield within sight of the lookout that was difficult to traverse. Not wanting to be a statistic, we turned back. The *erigeron x* must wait for another day.

Further south at Hamilton, I spoke with the "plant lady", botanist Linda Pietarinen who suggested we try Porcupine Saddle near Sula. She described it as a sub-alpine pasture and gave us a list of the plants there - a long list running to over 100 species. The drive in gave a dramatic view of the valley and the steep slopes had lot's of plants to see – most



Penstemon albertinus

striking was the *Penstemon albertinus* on the rocky slopes – intensely blue flowers set on plants seeming to lean with the grade. At the trailhead there was a large parking area where we set up camp and began poking around to see what was there. Lot's of species diversity - it was apparent the list didn't have everything. Next day we hiked

through a burn area crossing a stream to the gently rising slope of Porcupine Saddle. Before us was a rich meadow-pasture. Each step seemed to bring new plants into view, *Dodecatheon jeffreyi* with the drooping bells of a luscious *Mertensia oblongifolia*, 2



Mertensia oblongifolia

species of *Valeriana*, the taller *v. sitchensis* and a much smaller *v. dioica*. *Lupinus argenteus* rising to just above the grasses. On bare or disturbed patches, we saw a lovely and perfect small onion, *Allium parvum*, several different *Antennaria spp.*, a rosy-flowered *A. microphylla* being



Lupinus argenteus

particularly nice. Small mounds that resembled a tiny clubmoss growing in dry, open conditions were spotted here and there – it would be very useful for trough planting. The broad hillside led up to an extended tableland that stretched off into the distance. From there one had a panoramic view to the surrounding peaks and the

distant valley below. Descriptively-named Saddle Mt. was right across from us and above us at ~ 8800'. Porcupine Saddle is about 800' lower. On the north east side where recently there must have been snow, now was covered with *Erythronium grandiflorum* and *Trollius laxus*. Both madly flowering before the slope would dry out.



Castilleja pallescens

Here too was a diminutive *Delphinium sp.*, much smaller than the large *D. occidentale* that we saw lower down at the edge of the trees. Again, it was not on the list and I must make an inquiry. Green-flowered *Castilleja pallescens* grew with the ever-present grasses and the scattered *phlox longifolia*. Finishing the day we walked out past a large, sprawling *Artemisia tridentate*. In its midst was a tiny nest with three turquoise eggs – perfectly hidden in a shrub that



nothing eats.

Note, I found the Forest Service people to be very helpful with advice re: prospective areas to hike in. Road access is quite good in many areas and many locals actively use the Bitterroot trails – no doubt there are some who know and appreciate the wonderful flora that is so available there.

Harvey Wrightman – Text & Photos

2009 Programs

July 18

AM - Joe Strauch - "Gardens Near & Far"

PM - Local Garden Visit - Members Only

August 8

AM & PM - Alan Grainger - "From Seed to Showbench" & "Kentucky Wildflowers"

Sept 5

AM - Judy Sellers - "Primulas"

PM - The BIG Plant Sale

October 10

AM - Lola Horwitz - "Doing and Undoing"

PM - Members Potpourri

November 7

Annual Luncheon

Priscilla Twombly – *Program to Be Announced*



BERKSHIRE BOTANICAL GARDEN

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Fax (413) 298-4897

August 2009 Programs -

Creative, Easy Flower Arranging Saturday, August 1, 11 a.m. - 12:30 p.m. Demonstration/workshop, Cost members \$20; Non-members \$25 All levels

Learn how to pick, prepare and arrange flowers from the garden. Arrangements will cover simple Japanese influenced design, field and meadow flower bouquets and flowers from home gardens or purchased at the supermarket. Learn creative ideas on both arranging and container selection and how to brighten the home with ease and beauty. Instructor **Lou Kratt** is a professional gardener and flower arranger. She has worked as a professional gardener for many years and was Senior Gardener at the Berkshire Botanical Garden for 10 years.

Jams and Jellies

Wednesday, August 5, 1 - 3 p.m.

Lecture/discussion

**Cost: Members \$16, Non-members \$21,
Beginners**

Making jam and jelly from wild berries, homegrown fruits, herbs and even edible flowers petals from your garden is fun and easy. Spend a few hours learning the secrets of this craft. This workshop will cover the basic techniques used to preserve fruit and will detail food safety techniques used in the home setting. This program is for homeowners and not for a commercial setting. Instructor **Elisabeth Cary** is Director of Education at Berkshire Botanical Garden and in addition to cultivating a large home vegetable garden she preserves fruits and

vegetables for use in the winter months.

Flower Pot Exercise- Building a Better Body

Wednesday evenings, 5 - 6 p.m., Aug 5 - 26

Outdoor exercise in the garden, Cost: Series of 6 classes \$60 (students will receive a book of 6 vouchers good for classes throughout the summer)

Enjoy an hour of exercise in the garden based on Gyrokinesis, which is a unique system that strengthens and stretches the body. It helps you develop strong bones, lean muscles and flexible joints without all the huffing, puffing required with other styles of exercise. This fun, easy class is performed on upturned flowerpots approximately 20" in diameter. Instructor

Annie Rye is a movement educator and specializes in Pilates, Gyrotonics, and Therapeutic Yoga. She has taught for Canyon Ranch, Topnotch, The New York Sports Club and currently teaches privately in the Berkshires.

Nature Studies in Watercolor
Thursdays, August 6 - 27, 9:30 a.m. - 12:30 p.m.

Cost Members \$130, Non-members \$140

Individual classes \$37.50. Participants provide own material
Beginner/ intermediate

View the summer garden with an eye for color, mood and texture and capture it on paper with watercolors. Learn the basics of this medium, color mixing,

brush techniques and composition. Students will learn step by step how to create a watercolor. New techniques demonstrated at each class. Beginners are welcome. Attend the series or pick and choose individual classes. Instructor **Leslie Watkins** has taught both oil and watercolor painting for many years.

Book Making Workshop
Wednesday, August 6, 10 a.m. - 2 p.m., Lecture/Workshop

Cost Members \$35 Non-members \$40, all levels, Material fee \$5 Bring bagged lunch

Connect with your creativity and the spirit of nature in this hands-on bookmaking workshop based on the Spirit Book Series by Susan Kapuscinski Gaylord. After an introduction to

the Books and a walk in the woodland, students will make a simple book using Bhutanese paper adding texture, imagery and pattern. No art experience is needed. Instructor

Susan Kapuscinski Gaylord has been making and exhibiting handmade artists' books for over twenty year. In 2005 she completed her thirteen year project of Spirit Book Series meditative books that rest in cradles of wood, vines and roots.

Putting Food By - Freezing, Canning and Drying

Wednesday, August 12, 1 - 3 p.m., Lecture/discussion

Members \$16, Non-members \$21, Beginners



Learn how to freeze, can and preserve a wide array of foods including vegetables such as sweet corn and tomatoes and fruits and berries such as cherries, peaches, strawberries, raspberries and blueberries. Topics will include, fruit and vegetable selection, preparation, methods and procedures, food safety, and practical tips for successfully putting food by. This program is for homeowners and not for a commercial setting. **Elisabeth Cary** is Director of Education at Berkshire Botanical Garden and in addition to cultivating a large home vegetable garden she preserves fruits and vegetables for use in the winter months

Perennial Vegetables
Saturday, August 15,
10 a.m. --noon. ,
Lecture/discussion
/book signing

Cost: Members \$16, Non-members \$21
Perennial vegetables are perfect as part of an edible landscape plan or permaculture garden. Learn how to grow vegetables that require the same amount of care as the flowers in your perennial borders--no annual tilling and planting. Ranging beyond the usual suspects (asparagus, rhubarb, and artichoke) they include ground cherry, ramps and the much sought-after antioxidant-rich wolfberry. This lecture will cover how to raise, tend, and harvest these perennial plants.



Instructor **Eric Toensmeier** is co-author of a two-volume permaculture design manual [Edible Forest Gardens](#). He has worked as a farm trainer at the New England Small Farm Institute, and currently manages the Tierra de Oportunidades new farmer program of Nuestras Raices in Holyoke, MA. His best selling book *Perennial Vegetables* will be on sale following the lecture.

Standing Stones in the Garden
Friday, August 21, 10 a.m. - 4 p.m.,

Hands-on Workshop,
Cost Members \$140,
Non-members \$150
Materials included in the workshop, bring safety goggles. Bring a bagged lunch and dress for open-air work.

Learn the amazing ancient art of hand carving symbols and words into stone with an emphasis on creating a decorative surface. Watch a

demonstration and discuss various tools and stone surfaces. Bring a single decorative element and carve it into slate using a mallet and chisel. Bring safety goggles, all other tools and material provided. Instructor **Karen Sprague**, a stone carver is one of the few hand-lettering carvers in the world. Her specialty is hand carved letters and symbols in slate. In business for over a decade she has artfully carved memorials, sculptures and standing stones

Editor's Oddments:

I'm sorry about the lateness of this issue, but summer is not a good time to get members to spend time at their writing desk or computer, and the contributions were sparse and late. Harvey and Irene Wrightman went on an extended trip to western North America, and just returned this past Saturday with their contribution. Cliff, ever cognizant of our fixation with creatures that devour our plants, has offered an extremely interesting look at slugs, which is close to what I asked him to produce. My subject, when I was optimistic enough to imagine this issue WOULD have a subject, was 'Thugs,' but Cliff is a contrarian, albeit an extremely creative one, so he sent in his masterpiece on these purveyors of mucous.

My gardens have suffered during the extended monsoon season we've all experienced, but I do have quite a few interesting plants in flower right now. 5 Opuntias, gifted to me by John Spain 10 years ago, are systematically stunning me with their incredible yellow flowers. One bloom every day we've had sun for the past 2 weeks! My *Zauschneria garrettii* is covered with dainty red tubes. The rain seems to have made it unusually happy, since it has bloomed earlier and with greater intensity than in past years. It's been with me for 8 years, having grown it from Rocky Mountain Rare Plant seed.

Campanula rotundifolia has been blooming for weeks, and this picture shows it as it was on July 4.

And the Semps are all in bloom. Literally dozens of them are flowering, with their



strange yet attractive stalks topped with almost alien flowers in greens, reds and purples. They are a very satisfying plant for me, and when I tire of one or two, I simply pull them up and move them to another spot, something which cannot be done with anything else I grow.

I have an *Eriogonum douglasii*, grown from seed I started 10 years ago. Every year it grows about 20% larger, but it has never flowered. Alan Bradshaw suggested that I ought to stop watering it, given where it grows in the Columbia River basin. Well, I actually don't ever water it, but short of one of those British inventions using glass, steel and several motorized retractable domes, I really don't know how to keep it dry!



The next issue will be out too quickly, and I really would like some contributions from you sharing with us what is flowering in late summer in your gardens. A picture or two, a few sentences, and we'll all benefit.

See you all on Saturday.

PFG – photos by me

Positions of Responsibility

Chairperson – Cliff Desch
Vice-Chairperson – Robin Magowan
Secretary – Carol Hanby
Treasurer – Pamela Johnson
Archivist – James Fichter
Audio Visual Chairperson - Joe Berman
Greeter – Open
Independent Director – Peter F. George
Newsletter Editor – Peter F. George
Meeting Recorder – Elaine Chittenden
Plant Sale Chairperson – Bob Siegel
Program Chairperson – Elisabeth Zander
Proofreader – Martin Aisenberg
Refreshments Chairperson – Joyce Hemingson
Speaker Housing – Anne Spiegel

Published 10 times per year (Feb. through Nov.) by the Berkshire Chapter NARGS

Membership is open to all members of NARGS
Dues \$10.00 single, \$12.50 Family
Payable to the Treasurer
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Deadline for Next Newsletter is July 24, 2008

Please contact editor before reprinting
articles

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