

Still Coming in 2007...

Aug. 11: Water Blossom Festival

9:30 AM to 3:30 PM

Monet Pond

Denver Botanic Gardens –

*Demonstrations, tours, free
plants...and more!*

Sep. 9: Annual Mtg.& Board Elections

1:30 PM Gates Hall, DBG

*Interested in serving on the
Board? CWGS needs you!*

*Contact a Board member
to discuss options.*

Sept./Oct: Volunteer Sundays at DBG.

*Exact dates TBD. For
information and to
volunteer, contact Bill
Powell (303) 355-8098*

Dec. 1: Holiday Banquet: 6 to 9 PM Morrison Ctr., DBG



Volume 24 Number 6

August 2007

The Water Garden

I wish to thank the following CWGS Pond
Tour Hosts for opening up their ponds for us
to enjoy.

Don & Sue Eloe
Lois & Bob Mayerchak
Marge & Charlie Oleson
Joe & Carla Mascarenas
Keith Funk
Georgia Keller
Bob & Fran Hoffman

Scan the pages of this issue for shots of
ponds from both the CWGS and Rocky Mt.
Koi Club's tours. Photos continue on page 6.

If you missed the event, be sure to make it
next year! And, if you are interested in
showing your pond, get your bid in early.
We've yet to select an area for '08.

*Eloe residence – more
shots of Don and Sue's
and ALL the ponds
beginning on page 6*

Album of the Annual Pond Tour & Picnic Joint CWGS / Rocky Mt. Koi Club event a big success.

By Gary Blubaugh

I had 90 visitors to my pond, and we had 53
who paid to attend the joint club picnic at Vicki
and Dan Aber's house.

Everyone who came to the picnic received at
least two plants and enjoyed visiting with old
and new acquaintances. I apologize for the wait
to get a hamburger.

**Saturday Aug. 11:
Water Blossom Festival
Monet Pond
Denver Botanic Gardens
Article on page 3**

*Public welcome 9:30 to 3:30
Event is free, but usual DBG
admission applies*

Free Plants while supplies last!

2007 Board of Directors & Committee / Event Chairs

President Gary Blubaugh	303.989.4464	Newsletter Bill Powell	303.355.8098
Vice President Jim Arneill	303.843.9619	Membership Ken Lange	303.393.8410
Secretary Bill Bathurst	303.421.1144	Janet Bathurst	303.421.1144
Treasurer Ken Lange	303.393.8410	Program Bill Bathurst	303.421.1144
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		Jonathan Hough	303.499.6578
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		Holiday Banquet Joyce Blubaugh	303.989.4464
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		DBG Plant Sale & Volunteers Bill Powell	303.355.8098
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Feedback Needed:

Members, do you have thoughts regarding the Water Garden's MarketPlace section? Tell us how it's working for you. Contact Bill Powell at 303.355.8098.

Express Membership Application

Membership Fees: \$15.00 Individual; \$20.00 Family

Join or Renew Today!

Make checks payable to Colorado Water Garden Society;
DO NOT send cash; Check or Money Order only, please. Thank you.
Return this form with your payment to:

CWGS Membership
100 Glencoe St.
Denver, CO 80220

(Please Print)

Name(s) _____

Street _____

City _____ State _____ Zip _____

Home Phone () _____

E-Mail * _____

Signature _____

Date _____

Pond Experience (Beginner) _____ (Some Skill) _____ (Pro) _____

* Note: Providing your e-mail address authorizes and enables CWGS to send you notifications of interest from time to time. CWGS does not share e-mail addresses with other entities.

Contact me concerning volunteer opportunities I have checked below:

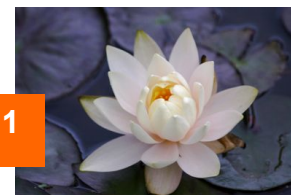
DBG Volunteer Sundays _____ Water Plants booth, DBG May Sale _____
Hudson Gardens _____ Newsletter _____ CWGS Plant Sale (June) _____ Pond Tour (July) _____
Water Blossom Festival (Aug.) _____ Holiday Party (Dec.) _____

Or...Did you know?

You can now pay your dues online at www.colowatergardensociety.org
using **PayPal**

Mark Your Calendar For This Year's

August 11



Water Blossom Festival

By Gary Blubaugh

Plans are underway for this year's Festival at Denver Botanic Gardens. The event will be held on Saturday, August 11th from 9:30 am to 3:30 pm at the Monet Pond.

One of the goals of the Water Blossom Festival is to recognize the CWGS volunteers who, under the direction of DBG curator Joe Tomocik, prepare the displays in spring and tend to the plants throughout the growing season. Their effort assures the public enjoys a splendid display.

Another goal is to provide the public an opportunity to broaden its knowledge of water gardening. Join us and brush up on how to divide and pot water plants. A CWGS volunteer will be doing demos showing how you can insure your water plants' wellbeing. In the past, members have expressed how much help these demonstrations have been to them.

Need help with a problem? CWGS volunteers will be on hand to answer specific questions about your water garden. And trained guides will also offer tours of the Gardens' many water features.

Have a spot for another water plant? During the event a limited number of water plants will be given away! (The offer is available during the Water Blossom Festival and not before 9:30am.)

Drop by on the 11th! And...if you have the time, volunteers are needed for the event. Contact Duff Kerr (303.871.0336) or Gary Blubaugh (303.989.4464) if you would be able to demonstrate division and potting of water plants, assist with tours, or answer water gardening questions.

Coming soon (again)...

It won't be long before volunteers return to Denver Botanic Gardens for our fall Sunday Sessions. To learn more about this opportunity, call Bill Powell (303.355.8098)

Treasurer's Report

CWGS Balance
As of July 21, 2007
\$ 20,708.95

(This balance reflects almost \$2,600 net profit from the June 2007 CWGS Plant Sale. Thanks, everyone!)

Water's Attraction



Impact from a drop of water causes an upward "rebound" jet surrounded by capillary waves – a function of surface tension.

photo by Wikipedia

"Communal" and "gregarious," water is both a universal solvent and the Internet of aqueous life.

By Bill Powell

Whether your focus runs to plants, fish, or the Zen of water in the landscape, water gardeners share a common interest: water itself. But even gardeners in arid Colorado take water for granted. After all, it falls from the sky (sometimes, when we're lucky) and it's readily available from the city tap.

Water may be commonplace, but the behavior of the water molecule is unique. Small and communal by virtue of a mild electrical charge, the properties of water molecules are directly responsible for the qualities and the life we admire in our water gardens.

Water runs together and clings, forming both sinuous waterfalls and isolated droplets. Water is attracted to itself and, helpfully, to other molecules. This flexible affinity makes possible the necessary communication of nutrients required for life. And, what's more, water is the universal solvent!

Chuck Hunt, a CWGS member, drew my attention to a recent article by Natalie Angier in the New

York Times. In her explanation of the basics of water, the author quotes Jill Granger, a chemistry professor at Sweet Briar College: *"Water behaves very differently from other small molecules. If you want something else with similar properties, you'd end up with something much bigger and more complex and then you'd lose the advantages that [the] water [molecule] has in being small."*

The water molecule's simple structure of two atom hydrogen atoms and one oxygen atom presents unique properties resulting from an imbalance of electrical charge. Oxygen attracts electrons more fiercely than does hydrogen. Consequently, the oxygen "end" of the water molecule has a net negative charge and the hydrogen portion of the molecule is mildly positive. The electrical imbalance (or polar bond), rather like a magnet, results in an attraction of water to itself and to other materials.

Water's attraction to itself is called cohesion. Cohesion is responsible for many of the delightful behaviors of water – it's coherent flow, it's ability to form droplets on the pad of a lotus, and the encapsulated bubbles that grow from the aerated splash of waterfalls.

Large numbers of water molecules will pull together and, under the force of gravity, group nicely as a placid reflecting pond or just as easily roar thunderously downhill. Small numbers of water molecules cling to themselves exhibiting the tendency to form spheres on the non-soluble surfaces of our lily pads or to break into individual droplets in the cascade of our waterfalls. This tendency of water molecules to close ranks and present the smallest possible surface area by forming a ball is another expression of cohesion – a high surface tension.

High surface tension makes possible the waves that ripple outward in concentric circles when a

Belated Thanks...for a job well done

Thanks to all of you who gave up your own "pond time" to stand in the hot sun and help staff the Water Plants Division of the Botanic Gardens' Plant Sale this past May. Your hard work, knowledge, and enthusiasm made our division's portion (and the whole) of the Gardens' sale a success.

The final accounting for the Water Plants Division shows net revenue after expenses of \$3,766.40. Although DBG's numbers for the sale as a whole are not quite perfected, it appears total net revenue for all divisions will be just under \$75,000 – almost \$19,000 above the Gardens' target for this year!

Attendance was up, too. 7,682 people came through the gates and were served by our wonderful volunteers. Thanks. We hope you'll join us again next year!

Marge Oleson and Bill Powell
Water Division Co-chairs
2007 DBG Plant Sale

PS: Special thanks to longtime CWGS members (and former Co-chairs) Carla Littlefield and Bob Hoffman!

Did You Know?...

The Water Plants Division of the DBG May Plant Sale is totally staffed by CWGS members. (Most divisions rely upon DBG recruitment.)

New and Renewing Members:

Jim and Tudi Arneill
Centennial, CO
Bill and Jayne Bittman
Arvada, CO
James Clarlo
Boulder, CO
Craig and Deb Dawson
Highlands Ranch, CO
Eric M. Ellison
Thornton, CO
Doris Freestone
Franktown, CO
Sue Gasiorowski / Hannah Cook
Ft. Lupton, CO
Larry and Rose Glass
Lakewood, CO
Dave and Barbara Hooker
Aurora, CO
Dennis Horgan
La Canada, CA
Veronica Kertesz
Boulder, CO
Carolyn Lupe
Denver, CO
Charles and Jean Mitton
Englewood, CO
Heather Rossi
Lakewood, CO
Kim and John Schmidt
Thornton, CO
Richard and Brenda Schmidt
Brighton, CO
Ann W. Shannon
Centennial, CO
Karl Williamson
Boulder, CO

Thanks for your interest and support!

Department of Summer Doldrums

By Bill Powell

Question: Hypoxia is....

- A. One of the nine Delphic muses
- B. A principality in Bavaria
- C. Something you'd rather not have in your pond.

Answer: The answer is C., of course. Another answer is "low oxygen." Hypoxia is a condition that describes the state of water that contains less than 2 parts per million of dissolved oxygen. The causes of hypoxia are varied, and the condition can occur both within large bodies and small ponds.

Excess nutrients, algae growth, decay of plant materials, and increased temperature all contribute to hypoxia which can be fatal to fish and other aquatic animals. The end of summer marks the height of the hypoxic season.

During late July a vast area of the Gulf of Mexico (5,000 to 8,000 square miles according to the USDA) goes dead from seasonal hypoxia. Fish and all marine organisms either flee or die. The loss of oxygen in the Gulf is attributed to excess nitrogen delivered by fertilizer run-off in the Mississippi and to seasonal water temperature stratification that allows oxygen-depleted water to sink to the bottom of the Gulf un-mixed.

Hypoxia can also affect ponds. Fortunately, prevention is simple. Here are a few tips:

1. Shade your pond water with plants. Sunlight encourages algae growth.

- Paradoxically, algae will eventually reduce sunlight's penetration of the water column, too, but in a way that stagnates and depletes oxygen. Pond dyes can work to inhibit algae as well and, when used properly, are not harmful to fish, but of course dye will frustrate your view of fish.
2. Do not allow lawn fertilizers (whether man-made or natural manures) to infiltrate your pond. When building your pond, slope the soil away from the water. If you fertilize your pond plants, use one of the solid pond tabs that can be inserted into the plant's root ball.
3. Remove dead and dying plant material before it can sink to the bottom and decompose. Degradation of dead plant material (eutrification) consumes available oxygen as part of the decomposition process.
4. Cut back on feeding of fish if excessive algae bloom is present. "Green" water is fine (the fish probably prefer water with a bit of color), but if the water becomes too murky, a reduction in feeding of the fish will help to limit excess nutrients that result from both from un-eaten food and fish mulm.
5. Increase filtration. Check and clean your filter regularly.
6. Increase aeration. Mix-up your water as much as possible. Run waterfalls, fountains, and in very hot weather add aeration with an air pump. Warm water holds less oxygen than cool water. Increased aeration helps to counter the natural stratification of water. If possible draw some flow from the bottom of your pond, not just from the surface.

drop falls into still water. (See photo.) Surface tension is also an important component of capillary action, the phenomenon that fuels botanic growth.

Inside the fibers of plants, water adheres to the sides of the capillary tubes. The water molecules closest to the perimeter of the tubes are attracted outward and upward toward the plant cell walls, conforming the surface of the water to a concave "meniscus" or bowl shape. Then because of its high surface tension, water's affinity for itself pulls the face of the intervening bowl tight and flat, microscopically raising the water level at the center of the tube. The process repeats itself incrementally, slowly pulling water into the plant until the force of gravity counters the phenomenon. (Other liquids, mercury for example, do not behave similarly. Mercury forms a convex meniscus.)

Evaporation of water from the crown of a plant during photosynthesis assists the upward flow of water in capillaries. As a by-product of the plant's exchange of gasses, excess water is expelled from the stoma or pores, lowering the hydrostatic pressure in the upper parts of the plant. This column of relatively lower pressure creates a pressure gradient within the capillaries. Water is drawn upward from below, overcoming gravity and bringing vital nutrients suspended in the water.

Water's unparalleled service as "the universal solvent" is of course why nutrients can be dissolved and transported by water. In her NY Times article, Ms. Angier observes water "is able to dissolve more substances than any other liquid. It can act as an acid, it can act as a base, [and] with a pinch of salt it is the solution in which the cell's thousands of chemical actions take place."

"At the same time, water's gregariousness, its hydrogen-bonded viscosity, helps lend the cell a sense of community."

"Water acts as the contact between biologic molecules, not just separating them, but imparting information among them," said Martin Chaplin, a professor of applied science who studies the structure of water at London South Bank University. "In an aqueous environment, all the molecules are able to feel the structure of all the other molecules that are present, so they can work as a whole rather than as individuals."

Sources for this article include:

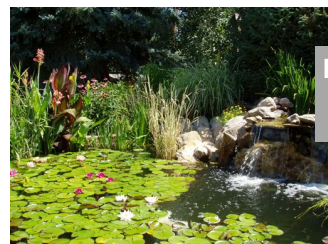
1. "Small, Yes, but Mighty: the Molecule called Water" by Natalie Angier in the July 10, 2007 issue of The New York Times.
2. "Water," "Capillary Action," "Meniscus," and "Transpiration" from the online encyclopedia Wikipedia.

Did You Know?...

1. The reason water is primarily a liquid under standard conditions is that it is more electronegative than all of the other analogous hydrides of the oxygen family and related elements in the periodic table except fluoride. Most of these substances are gaseous in their standard state.
2. A mature tree may lose several hundred gallons of water through its leaves on a hot, dry day. About 90% of the water taken in is expelled through transpiration. The evaporation serves both to cool the plant and our backyards.
3. 97% of the Earth's water is contained in saltwater oceans. Elsewhere in the universe, large stores of water are thought to exist below the surface of the planet Mars and on the moons Europa and Endeladus and certain other "exoplanets."

2007 Pond Tour Photos

CWGS ponds continued from front page

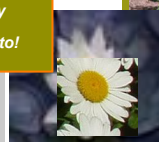


Eloe

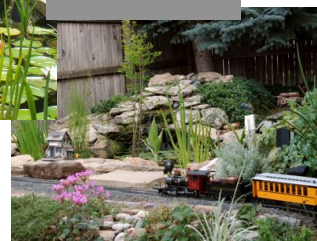
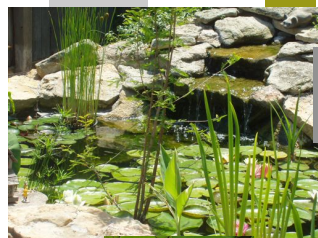


Blubaugh

Blubaugh's
Rare Shasta waterlily
...No, it's a trick photo!



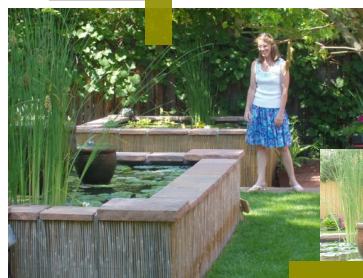
Oleson



Mayerchak



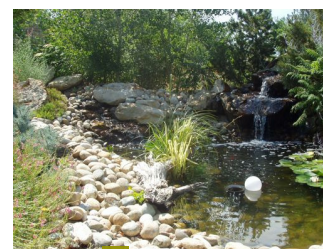
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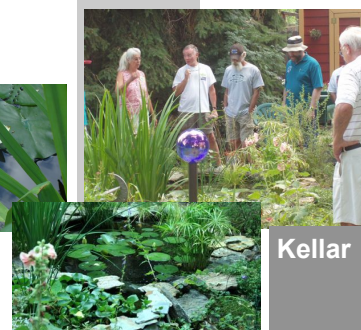
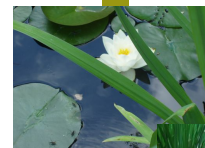
Mascarenas



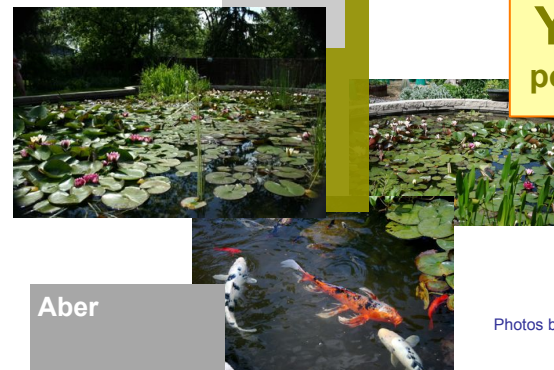
Plus...a sampling of Koi Club ponds:



Funk



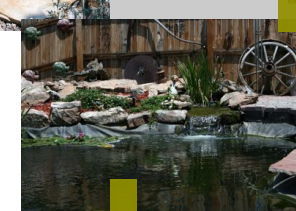
Kellar



Aber



Barnet
(right)
Bolduc
(left)



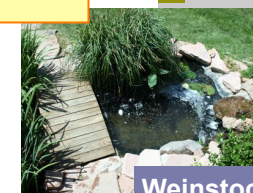
Greening
(left)



Ho (left)

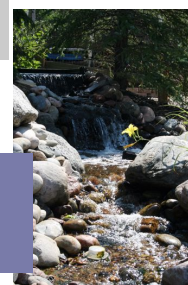
Painz (below)

Next year:
YOUR
pond here!



Weinstock (left)

Wesley (right)



Photos by Gary Blubaugh
and Bill Powell