The Garden Explored
by Mia Amato and the Exploratorium.
a book review by Kitty Schlueter

I am always amazed with how many books every library and bookstore has in their gardening section. And, while I have a shelf full of gardening books at home that I keep for reference, I am almost always unable to pass the gardening section without stopping and picking up a few books. Recently while in the Prescott library looking for something else, I happened to pass by the gardening section. I checked out two books this time. One was Herbal Bonsai - practicing the art with fast-growing herbs. The other was The Garden Explored - discover the unexpected science of plants, soil, sun and seasons. I usually page through the gardening books looking for new ideas and looking at the pictures, (and that was the case with the Bonsai book,) but seldom do I actually read one completely. However this time I sat and read one of the books cover to cover and found it as much fun as any novel I’ve read lately.

The Garden Explored, by Mia Amato, is one of a series of books from the Exploratorium, a museum of science, art and human perception in San Francisco. The series is the Accidental Scientist Books, “designed to reveal the hidden science underlying the things we do every day.”
Much of the book reinforces what we were taught in the Master Gardening classes. In many places it took the information a step or two further but always holding this reader’s interest. And, although the main focus is scientific, the book also discussed the historic and contemporary relationships people have with plants. Throughout the book are little sections called “See for Yourself,” with suggestions of things to try at home or to at least get one thinking about the implications of the information just given.

I found that the author’s style got me involved in the thinking process. One paragraph starts “Imagine, for instance, that you were a gardener living in Spain some 500 years ago. A friend drops off some seeds for you, from a plant he does not have a name for......” Suddenly I am transported to another place and time, identifying with other gardeners. A bit like reading a novel—a mystery, perhaps. And Ms. Amato is leading me down the garden path to discover the facts to the intriguing discoveries of the “whys” of the world of growing things.

There are some simple but good hints and tips on pruning, fertilizing, watering, planting and propagation. And the hints always go back to why they work. There are discussions about hybridizing irises at home, pruning trees to achieve various results, grafting for beginners, shifting soil ph, and growing plants in containers; most of these discussions had information that was new to me. There is some great science in this book, talking about photosynthesis, chlorophyll and phytochrome, plant hormones like gibberellins and auxins, ethylene, and abscisic acids. And always the science was interesting because the author related the facts to the common practices of the garden and the garden plants we grow.

No contemporary gardening book would be worth its salt without some mention of ecology and habitats; this book has a very reasonable approach and discusses Integrated Pest Management. Besides discussing why we need to manage our gardens with careful thought given to our environment, she gives some practical methods for solving garden problems other than using harsh poisons and chemicals.

The book is full of quotes from various people (Georgia O’Keeffe and Thomas Jefferson, for example) to help us remember that plants and gardens are and have always been an influencing part of the human experience. And, even though it is a small book, it has a good resource guide, full of book references and sources for products and information.

If you enjoyed the Master Gardening classes, you’ll enjoy this book. I found it to be a pleasant summer read and I also intend to look for other books in the Accidental Scientist series.

Short Notes

I was looking through the latest Fine Gardening Magazine and found an article on a website that rates mail-order gardening sources. It’s an interesting place, if you purchase from sources online or through the mail. In fact, I found it slightly addicting, finding out what the other people thought of the sources I use regularly. (Of course, you go straight to the negative comments.) I think it’s a great way to get a feel for how a company treats its customers and the quality of its products. There were surprises. Check it out before you buy. They also have listings of hundreds of nurseries that include contact information, what they sell and a link to a website, if they have one. I found several interesting nurseries I’m going to look into.

Go to www.gardenwatchdog.com
Check it out and let them know your experiences.

The most intriguing garden source: www.weirddudesplantzoo.com
With winter coming—well maybe—it’s time to look at the garden and see what you want to change, add or get rid off. Winter is a good time to especially look at the hardscape and build something new. I’ve put in instructions for water features in the past but here’s another idea to add to your garden space.

I’m not going to go into building a pond; I’ve done that before and there are lots of books out there to help you with that. This is a simple addition for an already existing pond that you want to spruce up or for adding some moving water to a project you are planning.

**Material**

- Copper sheets
  - 17 x 10 1/4 x .04 inches
  - 13 x 10 x .04 inches
  - 9 x 6 x .04 inches
- Railroad tie: 6 ft x 10 1/4 in x 6 1/4 in thick (or something equivalent in size)
- Galvanized coach bolts: 3-2 in x 3/4 in
- Soft copper pipe: 6 ft x 3/8 in.
- Plastic pipe: 20 in x 3/8 in
- Hose clamps to link plastic pipe to copper
- Medium sized submersible pump
- Cobbles or some type of rock—50 lbs
- Gravel—100 lb
- A selection of interesting rocks for the surface

**Equipment**

- Propane torch
- Electric drill with long reach 3/4 in bit
- Metal snips
- Claw hammer
- Adjustable wrench
- Spade
- Pipe cutter (to cut 3/8 in pipe) can be found at any hardware store

The weight of the railroad tie may require some additional help to move, as it will be around 400 lbs. It can be pulled around with a rope and lifted by one person by lifting it in small increments. Do not hurt yourself trying to move it; get a spouse, neighbor or one of the kids to help with it.

You want to position the post so that the water will flow into your pond as a small cascade.

**Copper Cascade**

from “Outdoor Water Features” by Alan & Gill Bridgewater

Drill five 3/4 inch holes in the railroad tie—two for the water pipe and three for the bolts. Using the coach bolts and wrench, bolt the copper cups into place.

Dig a hole for the tie; the bottom copper cup needs to be about 6 inches above the ground. Stand the tie upright in the hole and tamp the earth around it. It will stay in place better if you put a tile or stones into the bottom of the hole.

Run the copper pipe from the pond through the bottom tie hole, up the back of the tie and through the top of the tie. Cut to length so that it exits like a small tap just above the top copper cup. Avoid sharp bends in the pipe.

Run the input end of the copper pipe into the pond and link it to the pump with the plastic tube. Use cobbles, gravel and rock to give a streambed effect and hide the hose.
Drill five 3/4 inch (2mm) holes in the railroad tie—two holes for the water pipe, and three for the bolts. Use the coach bolts to bolt the copper cups into place.
Cutting the copper: ask first to have your supplier cut it into the size you need and that will save you a lot of work. To make the rest of the cuts and bends you will have to soften the metal. Heat it with a torch until it turns red, then plunge into cold water, then cut; this process may need to be repeated as you continue to cut.

After softening, chalk out the folds, (see diagram) and drill two 3/4 inch holes in the pieces. Cut down the central fold to the cross line. Bend the copper on the central fold line and then tap down the angles, aligning the drilled holes.

The copper will slowly age giving the copper a beautiful blue-green color. To age it faster, heat it with a torch and brush it with salt several weeks before using it.
Bleeding Hearts are plants that many people can wax nostalgic about. Not me. Being a desert girl, I never even saw one (in person) until I was a teenager. But if you grew up in the midwest these little beauties were part of many gardens. The good news is that they can grow Yavapai County with a little extra attention and the right location.

They get their name from the flowers which form pink or white hearts and an inner petal that is white with a small spot of pink (blood) on it—"bleeding hearts!" They have been compared to other things, so the plant has a host of common names—lyre flower, lady’s lock, lady-in-the-bath and dutchman’s breeches.

Bleeding Hearts were brought to the western world in 1847 by Robert Fortune from the Orient. They are native to Korea, Northern China and Siberia. English gardeners fell in love with the plants, adapting readily to their gardens. There are two American species, *Dicentra eximia*, fringed bleeding heart from the eastern U.S. and *Dicentra formosa* from the west. Neither is as large and showy as the oriental species.

Blooming happens from late spring to early summer. In hotter climates the flowers are short-lived. The plant is a perennial that reaches two to three feet high and two feet across. During the summer heat it will go dormant. If you trim it back before it goes dormant, it will send out new leaves and stay green.

Plant it in a place where it gets plenty of shade and protection from the wind; it won't take the blaze of full sun all day. Amend the soil well; it needs rich soil but will tolerate alkaline and heavy clay soils. Give it extra moisture. You might want to put this someplace where you can easily give it extra water as it is not drought-tolerant. If you have an area that holds moisture well, this is a good plant for that spot. Some sources I looked at suggested growing it as an annual, discarding after blooming. But give it a try as a perennial. With protection from the afternoon sun and moist soil, you might be able to keep it coming back year after year.

Plants can be found in nurseries or started from seed. If taking divisions, be careful as the roots are brittle. Will self-seed in the garden.

Some pests like it as well. Aphids and slugs can damage the leaves.

If bleeding heart interests you, check around, as there seems to be some interesting cultivars, including one with gold foliage, anther with yellow flowers.
Youth Gardening
September/October 2002

Seed saving time is here! At the Secret Garden, seed saving activities are planned, as well as growing winter vegetables. The garden has hung in there and on the days that the cafeteria uses school-grown tomatoes, a sign proudly proclaims to the students, "Tomatoes today courtesy of the Secret Garden."

Our cucumbers may make it in before frost, although most of the original plants were weeded out by an overzealous group of young volunteers. Oh well, their hearts were in the right place and those cucumbers apparently looked like weeds. More signs are obviously necessary!

Thanks to Joel S. Flagler, Associate Professor at the Rutgers University and Rutgers Cooperative Extension of Bergen County, New Jersey Department head, who came to visit the Secret Garden in August. Joel was in Phoenix as presenter of a Horticultural Therapy seminar and he, along with Dawna Steemer, a horticultural therapist and herb gardener extraordinaire, took the time to come up to visit. He was full of really fun ideas for fund raising, as well as suggestions on how to partner with other agencies and groups in the community. Partnering with other agencies creates a network of support for the garden. Projects could include building movable row covers using the man-power of at-risk youth groups, having signs made for the garden by inmates or juvenile probationers, Eagle Scouts making nesting boxes for the trees and Growing a Row for the Hungry in the vegetable garden next spring. The list goes on and on.

Do you know how to build or have a pattern for mobiles and wind chimes to hang in the trees? How about instructions on how to build a small bridge? The garden needs several bridges right now. Have you built a simple shade canopy in your yard that could be used to shade a picnic table in the Outdoor Classroom? If so, we need your talents and/or time in any way you can give!

Volunteers are needed with experience in vegetable gardening, drip systems, native plants, organic gardening, composting and patterns for garden accessories such as work tables, shade canopies, mobiles, wind chimes, nesting boxes, etc. Volunteer opportunities with and without working with children are available.

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The "Arizona Master Gardener Manual" is now on-line. Check out http://ag.arizona.edu/pubs/garden/mg/

NOTE FROM THE EDIT OR:
Let me know about your garden, the types of seeds you planted, interesting articles you found—anything of gardening interest. Send to: Nora Graf
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