Brilliance of the Forest

By Ron Spinosa

Hey, did you hear the one about the slime mold in a maze? No, this is not a joke—slime molds are smart enough to solve a maze. If you are ‘amazed’ by that feat, you will be even more surprised to learn that scientists recently created a robot that uses a slime mold as its brain—a slime-bot.

NOT A PLANT, NOT AN ANIMAL

Until recently slime molds belonged to a group of organisms called Myxomycetes, or “slime-fungus.” But slime molds are not actually fungi. They are in the same kingdom as amoebae and have more in common with animals than fungi. Their new name, Mycetozoa, means “fungus-animal,” and indeed, they move around and ingest food in a manner similar to amoebas, but reproduce like fungi, by shedding spores. Let’s take a look.

The slime molds you might see in the Garden are called “plasmodial” slime molds. This type of slime mold has a two-stage life cycle, and appears quite different during each stage. In the feeding or vegetative stage it is known as a “plasmodium.” Think of it as a giant amoeba that contains myriads of nuclei enclosed in a single cell membrane. It creeps and crawls like an amoeba, using pseudopods for locomotion. It is in fact a single cell of colossal proportion—indeed, the largest cell found in nature.

The color of a plasmodium can be red, yellow, orange or white, depending on the species of slime mold. You might encounter the plasmodial stage as a blob of yellow living slime networked with veins. The blob moves too slowly to observe its motion—a millimeter or so per hour. You can find plasmodia in cool, shady, moist habitats such as rotting logs, stumps or leaf litter.

Slime molds are “detritivores,” meaning they eat bacteria, organic debris and sometimes fungi, breaking down rotting vegetation and recycling nutrients for other species to utilize. They are eaten by organisms such as slugs, insects and even fungi. There is an entire family of slime mold beetles, Sphindidae, that feed exclusively on slime molds.

FRUITING BODIES

When food becomes scarce or environmental conditions are unfavorable, slime molds shift into the reproductive stage. They undergo an amazing metamorphosis and transform into “fruiting bodies,” as different from plasmodia as a butterfly is to a caterpillar.

A magnifying glass is needed to appreciate the fruiting bodies of most species, of which there are hundreds. Fruiting bodies are only about a millimeter tall and typically consist of a spore capsule on a stem, like a golf ball on a tee. They can be exceedingly beautiful and are well worth the effort to seek out. A few species of slime molds have considerably larger fruiting bodies. Dog vomit slime mold, Fuligo septica, can be as big as a dinner plate and resembles exactly what its common name implies. Another species that is easily spotted is the chocolate tube slime, Stemonitis splendens, which looks like a tuft of horse hair on the surface of a log.

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Dear Friends,

In some calendars, the new year begins in the fall, with harvesting the fruits of the year’s labors. I like the idea of easing into a new year at a time of plenty, followed by a time of rest and wintry introspection. Every season gets its due.

This autumn newsletter finds us with some transitions within the Friends organization, with a little musical chairs going on. One of my goals for the Friends has been to increase engagement of board members by encouraging their involvement in special projects. The Friends are fortunate to have a creative and passionate board willing to take on several exciting new opportunities.

Steve Benson has long served as the Friends investments chair, providing many years of sound and thoughtful management. Steve is now focusing on the Friends efforts to revive the Lady’s Slipper Celebration in June, in cooperation with the Minneapolis Park & Recreation Board. Gary Bebeau (who already serves as treasurer, memorials chair and website coordinator) has kindly consented to take on the investments chair role. Many thanks to Steve for his past service, and my gratitude to Gary for assuming the investments chair duties.

Jennifer Dunne has played an extraordinary role in recruiting, training, scheduling and nurturing our corps of volunteers, making the volunteer experience lively and fun. Jennifer is leaving her post as volunteer coordinator, but we are cheered that Melissa Hansen is stepping back into this position, which she previously held. Melissa will continue for now as Vice President as well, and Jennifer assures us that she will be a worker bee wherever else the Friends may need her.

If you are a member, you have received the first informational group email from the Friends. Our message carried news of the boardwalk construction taking place this fall and – bonus! – a photo of “dog’s nose fungus” found in the Garden. The email was the joint project of Lauren Hustings (board member, trombone virtuoso and founding member of Brass Lasses) and Gary Bebeau. We are planning future outreach via this approach, and meanwhile, you can learn about “dog vomit slime mold” in these pages.

Finally, Betsy McNerney – the editor of this lovely newsletter – is resigning the position to join her husband on his sabbatical travels this year. We are grateful that she has taken the Gentian to a level of professionalism and beauty, and hope she will find time to contribute to it in the future. At this time, I am very pleased to announce that Friends board member Colin Bartol will take over as editor. He brings to the role an award-winning background as an editor and superb organizational skills and vision.

My sincere appreciation goes to Steve, Jennifer, and Betsy for all they have done in important roles over the years. You have made a tremendous difference in the efforts of the Friends. Many thanks to Gary, Melissa, Lauren and Colin for the new roles you are assuming.

To the members of the Friends, and to all friends of the Garden, thanks for a great season, and for all your love and support for this beautiful place.

Sincerely,
Kathleen Connelly

A Gift to the Friends Can Save on Taxes

By Steve Pundt

Despite recent tax changes, great strategies still exist for realizing tax benefits from your donations to Friends of the Wild Flower Garden.

Since 1953, gifts to the Friends have been tax deductible due to our qualified 501(c)(3) status. However, many individuals won’t be itemizing deductions on their 2018 tax return due to an increase in the standard deduction under the 2017 Tax Act. Here’s how you can give to the Garden and continue to save on taxes:

First, giving appreciated stock to a charity avoids having to pay the capital gains tax. Second, transferring funds from an IRA directly to a charity satisfies part of the “Required Minimum Distribution” for those 70 1/2 or older.

Contact your accountant for details on how much your donation could save you.

Please also consider a gift to the Friends in your will or trust, or designate a specific amount or percentage of your life insurance or bank account. For more information, contact Friends board member Steve Pundt at steven@pundtlaw.com.
It’s been a beautiful and busy season at the Wildflower Garden. Although we opened a month later than scheduled due to wintry conditions, we welcomed an astounding 14,025 visitors at the Martha E. Crone Shelter from May 1 through October 31. Wow! This is the highest count on record in recent history. It means that thousands of people each month had an opportunity to connect with staff and volunteers in the Shelter to learn more about the flora and fauna and the rich history of America’s oldest public wildflower garden.

It is exciting to know that the Garden is appreciated by so many — far more than we can count! As only a portion of visitors stop in at the Shelter during their visit to the Garden, staff are looking into ways to capture a precise number of total visitors to the 15-acre grounds in future seasons.

It has been rewarding to watch our programs grow and reach new audiences. This season two tremendously successful toddler/pre-school programs were offered by Garden naturalists. The Nature Tots program was offered weekly and Garden Story Time was offered twice weekly, with over 560 participants registered throughout the season. Thanks to the high-quality programming developed and led by Garden naturalists, the children and their parents kept coming back for more!

Over 3,000 people participated in free and paid programs led by Garden naturalists in 2018. This includes the free public tours offered frequently throughout the week, such as Early Birders, paid public tours like Full Moon Hikes, and over 80 special group programs serving more than 1,370 youth and adults from schools like Folwell Park Freedom School and Hmong International Academy and adult groups like Garden Club of America and Hennepin County Master Gardeners.

The Wildflower Garden is fortunate to have such a dedicated, intelligent and kind-hearted team of staff and volunteers working to tend and share with visitors the beauty and wonder of native plants in a naturalistic setting. Thank you to everyone – visitors, volunteers and staff – for all that you bring and all that you give to this special Garden.

Susan Wilkins is the Garden’s Curator. Her column appears courtesy of the Minneapolis Park & Recreation Board.
NEW ONLINE BOOK ON FRIENDS WEBSITE

In Pursuit of Martha Crone

Review by Denise Sterling

Martha Crone, second curator of Eloise Butler Wildflower Garden and Bird Sanctuary and founder of Friends of the Wild Flower Garden, summed up her many years of work in the Garden when she wrote, “How fortunate that this native area was added while still in its unspoiled state... I have devoted my life to what I consider this satisfying pursuit.”

And just look at what Martha did!

Part 1 of the online bio chronicles the first 15 years Martha worked as a volunteer with founder Eloise Butler to collect seeds and plants for the Garden. Part 2 summarizes the Garden years 1933 – 1959, including the Upland Garden addition. “Martha probably did not want the six-day a week job of being Eloise’s replacement, but when Eloise died without finding a successor for herself, Martha stepped in,” said Gary. “She became the temporary and eventually permanent curator for 26 years, exactly matching Eloise’s tenure as curator. The Garden during her tenure became the place we know and see today.”

Part 3 focuses on Martha’s activities outside the Garden, such as assembling 4,000 color slides of native plants and her long affiliation with the Minnesota Mycological Society. Part 4 covers the last years of her life and includes tributes from friends as well as photos of the Garden from her extensive Kodachrome collection.

Martha’s writings and photographs might have been lost after her death in 1989 if it weren’t for the work of another biographer, Martha Hether. But Martha Crone and Ken Avery before her death in 1989 if it weren’t for the work of another biographer, Martha Helander. It was she who found Martha Crone’s diaries and notes for the Friends newsletter, her correspondence with Eloise Butler, and Eloise’s diaries and long-lost Garden logs. Gary has brought together the best of these materials to give us Martha Crone’s story. It’s a satisfying read. The book is available for download at https://www.friendsofthewildflowergarden.org/pdf-printable/marthacronehistorylo.pdf.

Denise Sterling is copyeditor of The Fringed Gentian.

Brilliant Forest
continued from front cover

SLIME SOLVER, SLIME BOT

The slime mold of “slime-bot” fame, studied in labs all over the world, is of the plasmodial type, Physarum polycephalum. It creeps forward in search of food by projecting fan-shaped pseudopods. The protoplasm in the veins flows forward for a few seconds and then reverses direction, repeating as it advances. This process of movement, as well as a skill at finding food and a tendency to shy away from light, inspired two fascinating experiments.

In one experiment, P. polycephalum was able find its way through a maze using an oatmeal flake placed at the entrance and another at the exit. The slime mold explored the entire maze and then retreated from dead ends or lengthy paths and connected the two food sources with a single vein. It had discovered the shortest path.

In another case, slime mold was grown on top of a circuit connected remotely to a small six-legged robot. A bright light was projected, and as the slime mold tried to move away from the light, its movement was sensed by the circuit. With the slime mold acting as its brain, the robot scrambled away and hid itself in a dark place.

Welcome to the world of intelligent slime! Ron Spinosa is an amateur mycologist, a retired naturalist and a Garden volunteer.
Mary’s Path

By Betsy McNerney

Until I met Mary T. Furth, I thought the work of gardening began inside the Garden. We were paired together on a garlic mustard pull in early spring with the Friends Invasive Plant Action Group. A seasoned FIPAG volunteer, Mary showed me where to look for these fertile invasives and how to wiggle them out slowly, so the plant comes up with its roots intact.

We ranged along the upper edge of the Maple Glen just outside the Garden, our plant collection bags quickly filling. One missed plant could mean hundreds of new ones next year, but Mary looked at it the other way around: each plant removed meant entire generations of garlic mustard would never sprout. “I’m just a weed nerd,” she said, explaining her outlook. “I do a whole lot more weeding than the average person would want to do.”

Mary is six feet tall with a strong, capable build and a wide smile. It’s easy to imagine her leading canoe expeditions out of Ely, four years running, with Voyageur Outward Bound. “I’ve always been an outdoors girl,” she said. Her remote wilderness adventures came to an end 20 years ago, after a car accident caused significant injuries and a serious concussion. A second car accident left her with a permanent traumatic brain injury. She began an ongoing program of physical therapy and, no longer able to work full time, started looking closer to home for “nature I could get into.”

She began volunteering in the Shelter and pitched in at a buckthorn removal event when she grew stronger. In 2010 she became one of the first legacy volunteers to work outside the Garden. She maintains a plot previously cleared by FIPAG as a “legacy” of native growth for future generations, and has taken on a second plot to ensure the perimeter area stays weed-free. “The Garden is all downhill,” she remarked. “When it rains these seeds are carried right into it.”

Just outside the front gate, a solitary path meanders off through the woods. Visitors coming down the stairs eager to reach the Garden can easily miss it. Mary had talked about how calming weeding was for the brain, and how her time in the Garden had helped her heal. One misty day on the cusp of fall, I headed down the steps and turned off onto Mary’s path.

Multiple sizes and shades and shoots of green rose up around me, light and deep and tinged with blue and a soft yellow and here and there a bright spit of orange. Young pagoda dogwood and great strapping oaks, maple seedlings and the bending fronds of false Solomon’s seal scattered over a springy forest floor. I could sense that Mary had been there. The area felt gently tended, not intensively planted like the Garden, but cultivated nonetheless.

An art major at St. Benedict’s, Mary got her start as a graphic artist designing vinyl album covers for Pickwick Records. “I’m very visually oriented,” she noted, a quality that comes in handy for spotting weeds in the forest.

“Some days it feels like I’m wearing a rescue cape,” she said. “There are native plants that wouldn’t be here if I didn’t come by.” A mass of rue anemone grows up in her legacy plot every year, and she has started to see trout lilies emerge. “They haven’t begun to bloom yet, but I recognize the leaves. I have one batch of trillium, but I’m worried the deer will find it.” She searches it out every spring, and when it pops up again, she positively exults: “Yay, kids!!!”

Cheers like this come from all over the Garden for Mary. She is special. Positive. Reliable. Kind-hearted. Knowledgeable. “She’s a go-to weeding companion for new volunteers,” said FIPAG chair Jim Proctor. “She teaches and guides them and makes them feel welcome.”

Everyone mentions her smile. “She lights up all our events,” said FIPAG coordinator Liz Anderson. “I was walking around the outside of the Garden last weekend and happened across Mary, working alone, digging burdock along the path. ‘It had rained,’ she said, smiling. ‘It’s a good time.’”

Betsy McNerney is editor of The Fringed Gentian.
“Ask Eloise”

Questions and answers overheard at the visitors’ desk in the Martha E. Crone Shelter.

Are there more acorns than usual this year? This year is a “mast year” for acorns. Botanist Robin Wall Kimmerer writes in her book Braiding Sweetgrass that every few years nut trees synchronize to produce more acorns than normal. Scientists believe this behavior is coordinated through trees’ fungal networks. Interestingly, squirrels fail to recover up to 74 percent of buried nuts, according to a University of Richmond study.

Were we hoodwinked by lady’s slippers last spring? Friends member Paul Hinderager pointed out an incorrect ID on the photo accompanying our last column: pink (stemless) lady’s slipper was photographed in the Quaking Bog and misidentified as showy lady’s slipper from the Garden. Showy lady’s slipper (Cypripedium reginae) is easily identified by its pure white petals and sepals and the combination of pink and white on its pouch. Pink or stemless lady’s slipper (Cypripedium acaule) has an entirely pink pouch, and all three sepals and two petals are reddish brown to green.

What are the naturalists looking forward to next spring?

“The return of the Nature Tots program and the story time experiences in the woods... our children have loved these mornings at the Garden.”

“The sound of gentle hammers starting the final stage of the Wetlands Boardwalk.”

“Bursting silver maple buds, green hummocks of moss, hepatica in bloom on sunny hillsides, bloodroot buzzing with the earliest of bees.”

Invasives Team Gains Ground in Maple Glen

By Jim Proctor

We look out over an open sweep of woodland valley, descending to a fern-filled glade with a pool at the bottom, and marvel. A solid wall of buckthorn has vanished, revealing a spectacular view of the Maple Glen. What an achievement! Years of work by lots of amazing people!

Before every weeding season, the Friends invasive team leaders and Garden Curator walk the Volunteer Stewardship Area (VSA) that includes the Maple Glen adjacent to the Garden. We plan our upcoming volunteer events and talk about the issues, problems and solutions that lie ahead.

During the walk my vision veers from the growing leaf litter around downed sticks and logs to the fading understory of forbs, grasses and shrubs. Coarse woody debris supports 30 percent of the life of a forest. Acorns litter the ground like I’ve never seen: it’s a mast year for oaks. Buckthorn seedlings are now few and manageable. We visit the Pennsylvania sedge we planted last spring on the bare, steep slope, and quickly agree on planting more next spring. Perhaps we’ll stake a log in place along the path, to try to prevent the protective blanket of leaves from washing down the slope. We have more work to do, but I take joy in the fact that our hours of labor have achieved such fine results.

As we head uphill, we approach a scene dominated by buckthorn stumps re-sprouted from a previous cutting. Those are the worst! Even so, I can see the results of the thinning we’ve done in past years. For our next buckthorn pull we decide to continue selectively thinning the boundaries of the VSA earlier this year! I remind myself, “We’ll do what we can do, as we can do it.” Together we decide on a strategy of weed-wrenching the smaller buckthorns and cutting the tops off the larger trees bearing berries. In this way we can stop the seed flow for now, limit the soil disturbance and revisit the cut trees later.

During weeding events our volunteers work hard for a short time, enjoy each other’s company over snacks and stories, and then work a little more. That’s how we’ve gotten this far. That’s how, in the next five to seven years, we will reach the boundary we have set for ourselves, and maybe, just maybe, go a little farther.

Jim Proctor is co-leader of the Friends Invasive Plant Action Group.
Memorials & Donations ~ June 2018 / September 2018

Memorials and donations to the Friends are tax deductible and constitute an important part of keeping the Garden a special place for generations of people to enjoy. In 2018 undesignated donations will be used for the Student Transportation Grant Program and for Phase II of the wetland boardwalk. Project update information is on the Friends website. An acknowledgment of donation will be provided to all donors.

Note on Memorials: Please give a name and address for the person honored, or their family, so that we can acknowledge to them that a memorial has been received. Memorials and donations should be sent to Friends of the Wild Flower Garden, P.O. Box 3793, Minneapolis, MN 55403. Checks are payable to Friends of the Wild Flower Garden, or donate on our website, www.friendsofthewildflowergarden.org

GIFTS RECEIVED in support of our programs from:

Amazon Smile
Cindy Angerhofer
Anonymous
Colin Bartol
Sharon Brunelle
Ellen Ferrari and Stewart Corn
Jeffery and Susan Dean
Meg Forney
Arlene Fried
Chris Mansfield
Robert W. and JoAnn M. Olson
Tom and Pat Scott
Karen Wass
Paul West
Cora Wortman

MEMORIALS RECEIVED for: Marcella B. Carter from Darryl G. Carter; for Janet Hamilton from Janet Anderson; for Penny Jacobs from Leah Ann Arneson, Arnold Chasen, E. and A. Ibs, Jerome Ingher, Julie Scher; for Marcy Kronfeld from Jerome Ingher

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Membership Form

Memberships can be ordered online at www.friendsofthewildflowergarden.org or mailed with a check payable to:
Friends of the Wild Flower Garden
Membership
P.O. Box 3793
Minneapolis, MN 55403-0793

Please specify if the membership is a gift.
Each membership is tax deductible to the extent allowed by law.

Donations and Memorials Form

Donations of gifts or memorials may be made at www.friendsofthewildflowergarden.org or mailed with a check payable to:
Friends of the Wild Flower Garden
P.O. Box 3793
Minneapolis, MN 55403-0793

Thank you for helping to sustain the Eloise Butler Wildflower Garden and Bird Sanctuary.
All gifts are tax deductible.

Name ____________________________
Address ____________________________
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This is a ☐ MEMORIAL or ☐ GIFT IN HONOR OF: ____________________________

Please notify: ____________________________

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New Members

INDIVIDUAL MEMBERSHIP
Janet Anderson, Robbinsdale
Liz and Van Hawn, Minneapolis
Erin Korsmo, Minneapolis

FAMILY MEMBERSHIP
Georgina Frankel, Minneapolis
Benjamin Hankey and Brittany Bork, Minneapolis
Paul Sanfilippo, Plymouth
Karen Wass, Deerfield, IL

SPONSOR MEMBERSHIP
Alan Branhagen, Chaska
Monica Wiedlin-Torres, Chicago, IL

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photo: Kari Christianson
The Eloise Butler Wildflower Garden and Bird Sanctuary comprises cultivated but naturalistic woodland, wetland and prairie environments, 2/3 mile of mulch covered pathways and a rustic shelter where educational programming and materials can be found. It is the oldest public wildflower garden in the United States, established in 1907. The 15-acre site is located within the city of Minneapolis and is owned and operated by the Minneapolis Park & Recreation Board. The Garden is open from April 1 through October 15 from 7:30 a.m. to a half hour before sunset. Weekends only October 15 to October 31.

CELEBRATING OUR VOLUNTEERS

2018 Volunteer Appreciation Event brings out a happy crowd on Oct. 28