

## **WormEzine Vol. 3 No. 5**

News and information from Mary Appelhof  
about vermicomposting, worms, and other critters that live in the soil.

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For the Small Print, scroll to end.

*They laughed when I said worms eat my garbage,  
but I showed them how, and now thousands say the same thing*

A WORD FROM MARY APPELHOF aka Worm Woman

Dear Worm Workers,

We're heavy into winter here in Kalamazoo. It's past Solstice, so the sun is returning, but it's cold. We haven't had the heavy snowfall that states nearby have had, so driving is not as hazardous. Today the branches were covered with a beautiful white hoarfrost that glistened against the rare blue winter sky.

I just listened to a re-broadcast of the Diane Rehm interview with Amy Stewart who wrote the book, "The Earth Moved: On the Remarkable Achievements of Earthworms". Amy makes earthworms every bit as interesting as we know they are. I think she even surprised Diane with how interesting the world of worms is. The fact that Diane chose to rebroadcast the program during vacation says a lot for what Diane thought of the show. It's archived on NPR; you can listen to it by going to:

HYPERLINK "<http://wamu.org/programs/dr/index.php>"

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<http://wamu.org/programs/dr/index.php>

I'll be reporting a bit on my fall trips to inform you about what has been going on in my worm world. I'd love to hear from you if things are going on in your neck of the woods that others interested in worms ought to know about.

Sincerely,

Mary Appelhof

Changing the way the world thinks about garbage

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1=====FEATURE=====

**THE FALL TOURS--2004**  
**Visits to Missouri, Georgia, Vermont, and Michigan**  
**Mary Appelhof**

Fall 2004 found me traveling in the Midwest, with trips also to Columbus, Georgia, and Middlebury, Vermont. I gave presentations to the general public, workshops for teachers, and met with classes at two colleges.

**Missouri Botanical Garden, St. Louis, Missouri**

Jean Ponzi wears many hats at the Earthways Center, a part of the Missouri Botanical Garden in St. Louis, Missouri. She develops programs on energy efficiency, conducts workshops, writes press releases, leads tours through the three-story Victorian home that serves as their office and demonstration site, and maintains the worm bin located in the kitchen there. Worms are a natural in this facility with demonstrations of earth-friendly technologies such as energy-efficient lighting sources, water-saving fixtures, energy-efficient window options, photovoltaic solar systems that power high-efficiency kitchen appliances, and landscaping that requires less water and uses no toxic chemicals. Learn more at: <http://www.earthwayshome.org/earthways.html>

<http://www.wormwoman.com>

In an event co-sponsored by the Missouri Botanical Garden, Madison County Planning and Development, and the St. Louis Jefferson County Solid Waste Management District, over 65 people attended my public lecture and book-signing, with some driving two hours or get there. Jean has produced a community radio program for 15 years entitled earthworms so it was a natural for her to interview me on her show. Jean got Janis Murray, Producer and co-host of Home Garden on KTVI to interview me on camera for a later show. She was fascinated by the worms so much so, that she spent another hour or so having Jean go through the entire process, including set up and harvesting, with the worm bin on-site.

The next day we had an after-school wormshop for teachers, with teachers from both Missouri and Illinois participating. There was much energy in the room, with old-timers who were still excited about using worms in their classroom after several years, to those who had just heard about the possibility. Ann Linenfelter, as Recycling Education Coordinator of Madison County, brought 12 teachers with her from Illinois. Her county funds her program through a surcharge on each ton of waste that goes to landfills. This gives her a sizable budget to work with and she feels that vermicomposting is such a motivator for kids, and teaches so much about the benefits of recycling and responsible earth stewardship that she made \$50 stipends available to the teachers who could then purchase books, bins, or videos.

I flew down to St. Louis, but worked my way by car up the state of Illinois, first visiting Chad Hurley's worm farm, New Horizon Organics, in Bunker Hill, Illinois, then Bill Kreitzer's operation in Gibson City, near Champaign-Urbana. Each of these worm-workers has a story of his own, so you'll hear them later.

### **Columbus State University, Columbus, Georgia**

My trip to Georgia in October was upon the invitation of a former biology student of mine at Interlochen Arts Academy over 40 years ago. Dr. Barbara Hunt is now head of both the Honors College at Columbus State University and of the English Department. She arranged for me to give a public lecture sponsored by the Honors College, and to talk to a couple of classes, one an environmental studies class, the other a methods class for elementary teachers. The last class was definitely the most exciting of them all. It was a hands-on type of class. We passed around my tie-dye-bandana-wrapped plastic worm bin with real live worms and the students could peer and poke inside the container and see that, yes, there really were worms in there and they really did seem to be eating the paper. The net remnants of a cantaloupe rind gave evidence of some garbage having been consumed. As I went through my books, giving their history, and showing how Worms Eat Our Garbage could introduce students to math, and science, and language arts, and social studies, you could tell the teachers-to-be could hardly wait to get their own classrooms and try having a worm bin. I attended one of Barbara's lectures the next day. It was gratifying and moving to know that I had had a positive influence on her those 40 years ago, and that I could learn every bit as much from her as she had ever learned from me. Isn't that the way education should be?

**Middlebury College, Middlebury, Vermont**

I flew from Georgia to Burlington, Vermont, where Phil Aroneanu, a junior at Middlebury College, picked me up at the airport and drove me the 40 minutes or so to Middlebury, location of a small liberal arts college. Middlebury College has highly-motivated students with excellent academic credentials--much like the students I had at Interlochen, or the students who attend Kalamazoo College here in Kalamazoo. Phil's classmate, May Boeve, had written a small grant to do a pilot vermicomposting project at the school, and she had arranged to have me come to give a worm workshop and public lecture. By the time all the arrangements could be made, May was on her semester abroad or, in this case, with the BioDiesel Team driving a bus the students had adapted for burning biodiesel fuel and touring in the east and mid-west. So I went at the invitation of May, but stayed under the friendly and interesting hosting of Phil.

The students at Middlebury are incredibly busy. How they find time to fit everything in is beyond me. Other guests were on campus that week. . . the aerial dance troupe Project Bandaloop. They utilize a new art form where dancers/climbers in climbing harness do choreographed pieces to music high in the air above the crowd. Founder, director, and dancer, Amelia Rudolph gave the Thursday Environmental Lecture at 12:30 to a packed auditorium. . . the same room I would be speaking in at 4:30. But who would come to my presentation about worms? How do you follow an act like that? Amelia and her dancer/rock-climbers were at Middlebury to dedicate the new library, and would be performing on (and off!) the front-face of the building, suspended by ropes from the roof. I had enough time before my lecture to go over and watch their rehearsal. Awesome! The grace, the rhythm, the movements affected more by the length of the rope than by the force of gravity. Learn more about them at: <http://www.projectBandaloop.org>

But students and faculty and out-of town guests including some friends, came to my presentation, even with everything else going on. The next day, a lovely, sunny day, Phil took me up to the student organic garden on a hill about a mile away from campus. We checked out the worm bin and scoped out the site for the big worm sort that would take place that afternoon when the students came up for the workshop. There was no electricity at the site, so no lights. Well. . . yes there was electricity. Photovoltaic panels powered a solar water pump. There was a 500 gallon tank water could be pumped into when the sun was shining. Then a gravity system of hoses permitted irrigation on what otherwise would have been a rather dry garden. It was obvious the garden had been very productive during the season, and there were still a few squash and greens coming on. It was lovely on that hillside looking back at the church with its steeple and the Vermont stone science building we had just been in. The picture-window view from the composting toilet outhouse gave a different perspective looking across the hills just beginning to turn fall colors.

The workshop was definitely casual and informal. The problem that had to be dealt with was that the garden site, hence worm bin, would be under a few feet of snow during the winter. No one would be coming out to check on or feed the worms, and the concern was that the worms would freeze. Phil's idea was to send the students who were

willing back to their dorms of living quarters with a bucket with bedding and worms. They could keep the worms in their room, feed them leftover snacks, fruit peelings, apple cores, and other food discards. And, come spring, there should be enough worms to set up the big bin at the garden for the coming summer. So, as students came up, some walking, others by bike, maybe a car or two, they shredded paper and sat or knelt on the blue tarp, sorting worms from the vermicompost. They became quite familiar with the dump and hand-sort harvesting method. And as they left the sunny hillside to go back to their quarters, they carried their bucket to see how the worms would fare in their new home away from home for the semester. It seems that the worms at Middlebury also get a semester abroad.

### **Bioneers Satellite Conference, Traverse City, Michigan**

As many of you know, I have attended the Bioneers Conference in San Rafael, California, the past three years. Ever since my first Bioneers Conference, I was so inspired by the presenters, energized by the atmosphere, and stimulated by the content, I returned to get another dose. But this year I chose to "Think globally, act locally," so I participated in the Great Lakes Bioneers Satellite Conference in Traverse City, Michigan, instead. It was a thoroughly delightful experience. Because of the difference in time zones (we are three hours ahead of California), local workshops are in the mornings, followed by a superb lunch of organically-grown food catered expressly for the conference. The plenary sessions are beamed by satellite from the California location in real time, so their morning plenary become our afternoon session.

It was awesome! I was amazed at how the energy-level in our auditorium with 360 matched the energy I used to feel in California where there were 3000. When people rose to their feet in California, they were spontaneously standing in Traverse City. When tears flowed in California, we had our share of tears in TC. Video is said to be a cold medium. Not the way these speakers came across! Presentations covered the gamut from biodiversity to the precautionary principle, design innovations for ending fossil fuel dependence, the importance of independent media, linking body and soul through understanding the molecular chemistry of emotion, the art of peace. As a regional gathering, local workshops gave tools and networking opportunities in local currencies, community gardens, sustainability issues as defined by the indigenous community, fair-trade coffee, water quality in the Great Lakes, and, of course, building your own worm bin. I've said it before, but I'll say it again. Whether you attend a Bioneers satellite conference near you, or make a pilgrimage out to California next October, I highly recommend putting it on your calendar!

### 2=====NOTABLE BITS=====

A. NEW HORIZON ORGANICS INSTALLS MOBILE VERMICOMPOSTING UNIT AT IKEA IN SCHAUMBURG, ILLINOIS. Chad Hurley reports that the new mobile units he designed are now being tested at the IKEA store in Schaumburg. They are a continuous-flow design built-in to 24-ft insulated trucks. Each of two trucks has two units, one on each side with a center access aisle. One unit is shortened to allow for the

shredder/mixer to prepare the food waste and bedding for the worms. Food waste from the employee cafeteria is being processed by the worms. The eventual goal to have efficient processing of the food waste and vermicompost produced as a product. This innovative and landmark project is being funded by a grant from the State of Illinois, with additional contributions from IKEA and New Horizon Organics. Those who come to the Illinois Vermicomposting Symposium in Springfield Feb. 7 will be able to examine this system.

B. WORMS GET THE JOB DONE FOR CENTER HARBOR WOMAN. Melissa Jordan is an example of someone who is putting her ten years of experience, her passion for worms, and her continual search for good information to good use. She gives enthusiastic presentations regularly to schools and in her community, and sells a variety of vermicomposting units from her website at <http://www.wormpost.com>

The Union Leader, New Hampshire had a great article about her at [http://www.theunionleader.com/articles\\_showa.html?article=48283](http://www.theunionleader.com/articles_showa.html?article=48283)

C. NEW YORK TIMES WRITES ABOUT WORMS. . . AGAIN. Not a stranger to articles about worms, the New York Times published a feature article in their Metro edition on November 3, 2004 by Jennifer Medina entitled "She Has Worms in the Closet, On Purpose." Featured is Alixe Dancer who keeps her worms in a purple five-gallon bin in her bathroom to eat the fruit and vegetable scraps that would otherwise go into the garbage. According to Medina, there are hundreds of worm bins in the city, tucked away in kitchens, living rooms, and closets. I loved the part in Medina's article where she described a couple who redesigned their Bronx apartment using feng shui, and the worm bin became their earth element in a romantic corner. Read the article at: <http://www.nytimes.com/2004/11/03/nyregion/03compost.html?ex=1104382800&en=42fa604ca5895e39&ei=5070&oref=login>

3=====COMMENTS FROM THE EMAIL ROOM=====

Mary,

Is there an air bubble in the cocoon in your video?[Wormania!] If not, what is it, and how do you explain it? I share it with the kids, and they always ask!

Karin,

Nice to hear from you. Yes, that is an air bubble in the cocoon in the video. I'll tell you how I set things up for that video.

I was using a color surveillance camera for the imaging. It had the capability of putting extensions on the lens so that it would magnify the image. . . like using a bellows on a camera (boy, that dates me, doesn't it?. . . the kids won't have a clue!) I had a beam splitter so that some of the image went to the TV monitor for viewing, the other went to the hi-8 camera for recording. OK. . . that was the recording set-up.

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I got a bunch of cocoons from my worm bin and looked for one that seemed to be reddish. . . meaning that the baby worms inside had blood beating within their vessels. I lucked out, (chance favors the prepared mind) because the cocoon was just ready to hatch. I didn't want the cocoon to dry out, so I put it on a glass slide with a drop of water on it. Top lighting alone wasn't good enough. . . I wanted light to come up through the cocoon. I put aluminum foil under the slide so that light from above would reflect on the foil and pass up through the cocoon. This also gave a dark field background that worked better with the image. Then, a baby worm tried to poke it's head out of the cocoon! It seemed to be a rather hostile environment for it, so it went back in. In and out, time and again. one worm, then another, then another. It wasn't until the third worm came out that we knew it would be 4 worms total in the cocoon that would hatch. Somehow the air bubble got inside the cocoon and caused it to float somewhat in the bubble of water. The drop would also catch highlights from the overhead light which would obscure the image of the worm. We must have recorded some 50 minutes of footage of the worms hatching. We were jumping up and down with excitement to see this remarkable event and know that we were recording it for posterity.

So there's my story for your kids. I'm glad they are interested, and hope this encourages some of them to get out their video cameras and try to find a cocoon that is about ready to hatch. They know enough, they can probably be successful.

Also, on the worm's heart beating, is that one worm folded over, or two worms laying side by side? †Stupid question, but thought I'd ask!

Yes, the worm is folded over. It would have been nice to get a worm stretched out in a linear fashion, but the images that were in focus are what you see. I'm glad they're looking closely and paying attention!

Keep on asking questions! And asking the worms to give answers, too!

Sincerely,

Mary Appelhof aka Wormwoman

5=====COMING EVENTS=====

FEBRUARY 7, 2005, SPRINGFIELD, ILLINOIS. Illinois Second Vermicomposting Symposium. This one-day event with an additional field-trip day has been organized to stimulate the vermi products market. The symposium is co-sponsored by the Illinois Department of Commerce and Economic Opportunity, the Illinois Department of Agriculture, the Illinois Stewardship Alliance and the City of Springfield-Office of Recycling and Solid Waste.

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Speakers include Mary Appelhof, internationally known author and vermicomposting expert, who will present findings on the benefits of compost teas and Dr. Gary Bachman, Associate Professor at Illinois State University, who will discuss his research on uniformity of physical and chemical properties of the finished vermicompost.

IKEA in Schaumburg, Illinois is vermicomposting food waste from the store's restaurant. Mark Lonegra, IKEA's Environmental Coordinator and vermicompost project manager, will talk about the project and lead tours of the IKEA/New Horizon Organics, Inc., vermi truck.

Concurrent sessions will follow in the afternoon, with a reception in the evening. On Sunday, February 6, and again on Tuesday, February 8, symposium attendees will have an opportunity to tour a large scale (6 tons of worms!) worm farm.

Registration is \$35.00 in advance and \$50 at the door. To register, and for more information, contact Brett Ivers at 217/524-5859 or [brett\\_ivers@commerce.state.il.us](mailto:brett_ivers@commerce.state.il.us).

#### 5=====PRODUCT HIGHLIGHTS=====

A. *LEAF COMPOSTING VIDEO A CLASSIC*. There was a day when counties around the country didn't have Master Composter Programs. Unless you subscribed to Organic Gardening Magazine or The Mother Earth News, you weren't likely to find information about how to build a backyard compost pile. People still burned leaves, smoking up the neighborhood with the familiar, but health-threatening smell of burning leaves. In my community, state government was just beginning to encourage city leaf collection programs to compost the leaves to keep them out of landfills. Jan Lambright, a local cable access producer wanted to help me get the message out about how citizens could build their own compost pile and use the compost in their gardens, so she came out and videotaped the process. Watch with amusement as you see Mary Frances Fenton do most of the work layering piles of oak leaves with a pick-up load of manure (nitrogen source), and add water with a garden hose while I narrate. It's a bit corny, but the basics are there: need for volume, aeration, nitrogen, moisture. One of the first educational videos on composting produced, I've talked to recycling coordinators who have shown it dozens of times to various classes. Order this classic for \$5 savings by mentioning in your phone order at 269-327-0108 or in the comment line on your internet order at

[http://www.wormwoman.com/acatalog/Wormwoman\\_catalog\\_Leaf\\_Composting\\_34.htm](http://www.wormwoman.com/acatalog/Wormwoman_catalog_Leaf_Composting_34.htm)

B. AMY STEWART'S BOOK, *THE EARTH MOVED: ON THE REMARKABLE ACHIEVEMENTS OF EARTHWORMS*. If you are a worm lover, this delightful book belongs on your shelf. . . but only after you have finished reading it! Diane Rehm chose to repeat Amy's interview on her NPR broadcast. . now THAT'S a recommendation for you! Order it from us at:

HYPERLINK "<http://www.wormwoman.com>"

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6=====ABOUT THE AUTHOR=====

Mary Appelhof is founder and president of Flowerfield Enterprises, which develops and markets educational materials on vermicomposting. Its publishing imprint is Flower Press, publisher of the how-to book *Worms Eat My Garbage*, the classroom activity book and curriculum guide, *Worms Eat Our Garbage: Classroom Activities for a Better Environment*, *The Worm Cafe: Mid-scale vermicomposting of lunchroom wastes*, and *Diabetes at 14: Choosing tighter control for an active life*, which is not about vermicomposting, but is an invaluable asset for anyone affected by diabetes.

7=====THE SMALL PRINT=====

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