

Michigan Community College Biologists



Dr. Gerald Goldstein

Spring Conference at Monroe March 30, 31

Monroe County Community College will host the Spring 2007 MCCB Conference on March 30, 31. We have what we hope will be a fun and informative conference for you. Friday night we are delighted to have Dr. Gerald Goldstein present to us on the topic of Enology: The Microbiology of Wine. Jerry has been making wine for 15 years and has taught a very popular Enology course (BOMI 106- Enology) for 10 years. In the course he surveys the gamut of wine making including the chemical composition of grapes and wine; yeasts and fermentation; and the vinification, storage, aging, clarification, stabilization and bottling of wines. When Jerry is not having fun making wine and teaching Enology he is busy as the Chair of the Department of Botany & Microbiology at Ohio Wesleyan University in Delaware, Ohio. His doctorate is in Microbiology from University of Wisconsin-Milwaukee. He has been awarded both NSF and NIH research funding for his research interests, which include

antiviral drugs, the effect of toxic oxygen molecules on viruses, and the comparative genetics of keratinase producing *Bacillus licheniformis* (this has some impressive practical applications involving the hydrolysis of discarded bird feathers), and presented research findings at numerous American Society for Microbiology Conferences. In addition to the popular Enology course, Jerry has also taught Introductory Microbiology, Medical Microbiology, Bacterial Physiology, Molecular Genetics, and Molecular Virology, as well as advanced Seminars in Microbial Bio-warfare and Bioinformatics (the computer analysis of DNA). In conjunction with Dr. Goldsteins talk, we will have a wine tasting activity after dinner. (juice, water, soft drinks and coffee, as well as few beers, will also be provided.) The wine presented for tasting will feature Michigan wines, some award-winners. Wine is being donated by Harry Benson, one of the conference organizers and representative of Morton Publishing. Registration for



La-Z-Boy Center
Monroe County Community College

In This Issue:

- Conference info
- Biology in the news
- Governors education initiative
- Toledo Trip

Friday night will begin at 5:30 with dinner being served at 6:30, followed by wine tasting and Dr. Goldsteins talk.

Saturdays activities will begin at 7:30 with registration, fruit and bagel breakfast, and executive board meeting. At 8:30 we are pleased to have Dr. Roger Eberhardt from the Office of the Great Lakes, Michigan Department of Environmental Quality who will present on Aquatic Invasive Species in the Great Lakes Region.

You will have about a half hour break after Dr. Eberhardts talk to friends, get a cup of coffee, and peruse the displays of the many vendors who are sponsoring our spring conference. These vendors will include traditional book publishers (Hayden-McNeil, McGraw-Hill, Morton, and others), Electronic publishers, supply houses, equipment supply and repair (Benz Microscopes), and even an anatomical model provider. (About 10 vendors have responded that they want to be part of our conference, but only those whose checks I have received have been listed here.)

The late morning will bring 2 sessions, one on Passerine Bird Calls, just in time to brush up for our returning feathered friends this spring. Bob Pettit, of Monroe CCC, a noted local bird authority, will guide us through this fun offering. The other session will feature Dr. Kent Krach, dermatologist and melanoma specialist. Dr. Krach trained at the University of Michigan where he was named to a Melanoma Fellowship, and has practiced Mose surgery first in Chicago for several years, and more recently on Americas 'melanoma gold coast (Fort Lauderdale, Florida). He is returning to Michigan to practice and teach.

our vendors before lunch at 12:30, followed by the general membership meeting at 1:15. After lunch we will take a tour of the beautifully renovated Science Building at Monroe County Community College. From 2:30 till 3:30 we will have break out session for Microbiology (moderated by Cynthia Schauer of Kalamazoo Valley CC and Diane Anderson of Washtenaw CC), General Biology (moderated by Cindy Bida of Henry Ford CC and Richard Koblin of Oakland CC) and Anatomy and Physiology (moderated by Paul Krieger of Grand Rapids CC and MCCB President Heather Wesp of Montcalm CC).

After the conference: Monroe County CC is also hosting an Antiques show on the 31st and April 1st at the Welch Health Education Building (9am-5pm, admission \$3, <http://www.monroeccc.edu/events/cce-events.htm>). If

you are interested, you can go wander around the offerings there after the sessions have ended. The largest tourist attraction in the state of Michigan, Cabela's, is at the junction of US-23 and M-50 (exit 17 on US-23). You can take a virtual tour of the store at <http://www.cabelas.com>. More area attractions were compiled by Jerry Host and will be available at the registration table when you arrive.

Driving Directions:

From the North and South and West: Take US-23 to exit 17, Dundee M-50. Turn east and travel on US-50 through Dundee (turns are well marked) east to Raisinville Rd. (about 11 miles). Turn south on Raisinville Rd about 1 mile to WCCC. The La-Z-Boy Center, pictured on page 1, is the closest building to the road.

From the East and Northeast: Take I-75 south to Dixie Hwy. M-50 (exit 15). Head west, then south west on M-50 2.2 miles to Elm St. Turn west and travel 3.6 miles on Elm/N. Custer Rd. to Raisinville Rd. Turn south and travel 1.6 mile to WCCC.

OR:

Take I-75 south to La Plaisance Rd (exit 11). Turn right on La Plaisance and travel 1 mile. Turn left on East Dunbar Street and travel 4.3 miles to Raisinville Rd. Turn right about $\frac{1}{4}$ mile and you are there.

Lodgings: all of the following will give a group discount except Hampton, Motel 7 and Comfort Inn. Contact the person whose name is in parentheses for rates and restrictions.

Holiday Inn Express (I-75 at exit 15) 734-242-6000 (Debbie)

Best Value (I-75 at exit 15) 734-289-1080 (Michelle)

Hampton Inn (I-75 at exit 15) 734-289-5700

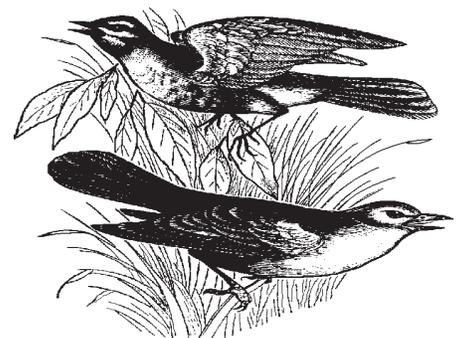
Knights Inn (I-75 at exit 15) 734-243-0597 (least expensive) (Mr. Firas)

Best Western (I-75 at exit 15) 734-289-2330 (Lisa)

Motel 7 (15390 S. Dixie Hwy.) 734-384-1100

Amerihost Inn
(I-75 at exit 11)
734-384-1600
(Jas Sohi)

Comfort Inn
(I-75 at exit 11)
734-384-1500



BUILDING A 21ST CENTURY WORKFORCE

We are all aware of the economic situation in Michigan. As science educators, we need to be aware of the plans our state has for retraining displaced workers and for educating our high school graduates. The following are excerpts from Governor Granholms State of the State Address and an accompanying document issued by her office entitled "Building a 21st Century Workforce". She has big plans for us!

"This fall, we will open the first of a series of revolutionary new high schools. They will allow students to earn in five years both a high school diploma and a community college degree that will prepare them to fill job vacancies in our health care industry. For example, Henry Ford Hospital in Detroit is sponsoring one of these schools. ... That's why we created the Michigan Promise scholarship - \$4,000 for every single child to give every student in Michigan the ability to earn a two-year college degree. ... As we increase our investment in our colleges and universities with the budget I present in two days, I'll require them to keep tuition and costs affordable for Michigan families. ... Tonight we are launching the Michigan Nursing Corps, an initiative to train new nurses. ... We will prepare 500 nursing educators to train 3,000 new nurses in just three years."

Governor Granholms No Worker Left Behind plan will help more than 100,000 displaced workers by:

- providing up to two years free tuition at any Michigan community college or other approved training program;
- allowing displaced workers to receive needed training in high demand skills while receiving unemployment benefits.

To qualify for the NWLB program, displaced workers will need to take a skills assessment test administered by Michigan Works! agencies (MWAs). Qualifying workers must pursue an associates degree or attend a technical training program in a high-demand occupation, emerging industry, or entrepreneurship program. High-demand occupations vary from region to region, however some common examples include healthcare, accounting and bookkeeping services, information technology, auto service technicians and mechanics.

Addressing Michigans nursing shortage, which is estimated to be 18,000 by 2015, has been a high priority for Governor Granholm since taking office. The Governor understands that the nursing shortage is both a public health concern and an economic development issue in Michigan. Under her leadership, Michigan has invested in innovative strategies to create a high-quality nursing workforce that meets the health care needs of communities across the state.

Michigan is addressing the current nursing shortage and the future workforce needs of the state, but must do more to expand the number of faculty in the states nursing programs, increase clinical placement opportunities, and provide accelerated degree programs for workers choosing nursing as a second career.

In her State of the State address, Governor Granholm unveiled the Michigan Nursing Corps to address these needs. In the next three years, Michigan will train over 500 additional nursing faculty and graduate more than 3,000 additional nurses. The Michigan Nursing Corps initiative will:

1. accelerate training of masters-prepared nursing faculty through nationally accredited programs in Michigan;
2. accelerate training of doctoral-prepared faculty through nationally accredited nursing doctoral programs in Michigan;
3. accelerate training of staff nurses prepared as clinical faculty using a common statewide curriculum developed by accredited grantee institutions. This training will allow for additional clinical placements for nursing students in an effort to eliminate the current 3-5 year backlog of clinical placements required for graduation.
4. recruit Michigans displaced workers holding bachelors degrees in science for admission to accelerated, one-year programs in accredited Michigan nursing programs. Participants in all of these programs must commit to working and teaching in Michigan.

Together, these steps will both increase the number of trained nurses in Michigan and the states capacity to train additional nurses. The increase in nursing faculty and increased availability of clinical instructors and clinical placements will enable more timely completion of nursing programs and more new nursing graduates to care for Michigans citizens.



Amid pest's attack, Chippewa tribe preserves black ash seeds

MOUNT PLEASANT (AP): The Saginaw Chippewa Indian Tribe of Michigan is preserving more than 20,000 black ash seeds with hopes of someday helping the Midwest recover from the effects of a tree-killing beetle. The seeds — frozen and dormant, vacuum-sealed in plastic — are being stored at the Soaring Eagle Casino & Resort. “The seeds are now suspended in time,” Sally Kniffen, who led the tribe’s effort to save the seeds, told the Morning Sun for a recent story. The emerald ash borer, which feeds on the leaves and wood of ash trees, is blamed for the loss of nearly 20 million trees in Indiana, Ohio, Michigan and neighboring Ontario since it was found near Detroit in 2002. The ash-borer — a half-inch long, quarter-inch wide insect that is metallic green — hails from China, Korea, Japan, Mongolia and eastern Russia. The borer spread to the United States, probably in crates of pallets. The ash is hugely important to the Saginaw tribe’s culture. The tree’s wood provides the splints to make ash baskets and knowledge of how to make those baskets has been passed down for generations. Tribal-funded teams collected seeds from woodland areas and Shepherd Public Schools property. Kniffen has worked with federal experts to help evaluate the seeds. Only 10 percent are expected to remain viable over time.

“It’s not good odds,” Kniffen said. “But our basket-makers say it’s about what you get in nature, anyway.”

- **The Manistee News Advocate**, submitted by Pete Clason

LETTER FROM THE FIELD; A Fellow Mammal Leaves the Planet

Robert L. Pitman has spent 30 years studying the world’s whales, dolphins and other aquatic mammals. He returned to San Deigo, Calif., last week after a fruitless six-week expedition in which teams of five observers on two vessels scoured the Yangtze River from the Three Gorges Dam to Shanghai, seeking the last members of the rarest cetacean species of all, a white, nearly blind dolphin called the baiji, *Lipotes vexillifer*. The dolphin is now considered, at best, “functionally extinct.” Dr. Pitman wrote this note in response to a reporter’s question about the broader implications of this, the first apparent extinction of a cetacean in modern times.

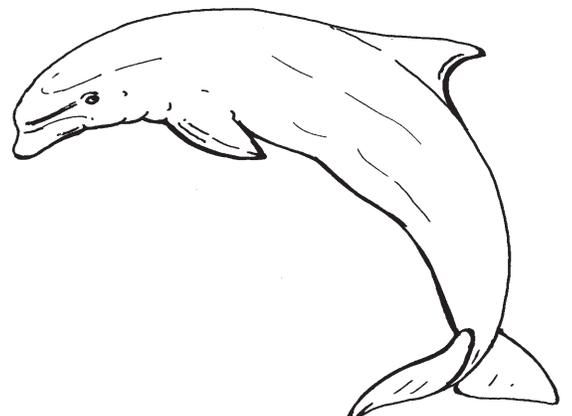
Locally, the Yangtze River is in serious trouble; the canary in the coal mine is dead. In addition to baiji, the Yangtze paddlefish is (was) probably the largest freshwater fish in the world (at least 21 feet), and it hasn’t been seen since 2003; the huge Yangtze sturgeon breeds only in tanks now because it has no natural habitat (a very large dam stands between it and its breeding grounds). The whole river ecosystem is going down the tubes in the name of rampant economic development. There is a huge environmental debt accruing on the Yangtze, and baiji was perhaps just the first installment.

Globally, scientists have been warning for some time of an impending anthropogenic mass extinction worldwide. Previous bouts of human-caused extinctions were due mainly to directed take: humans hunting for food. What we are seeing now is probably the first large animal that has ever gone extinct merely as an indirect consequence of human activity: a victim of market forces and our collective lifestyle. Nobody eats baiji and no tourists pay to see it — there were no reasons to take it deliberately, but there was no economic reason to save it, either. It is gone because too many people got too efficient at catching fish in the river and it was incidental bycatch. And it is perhaps a view of the future for much of the rest of the world and an indication that the predicted mass extinction is arriving on schedule.

For the Chinese, I think that losing a half-blind river dolphin and a couple of oversize fish was a fair trade for all the money that is being made there now. China is an economic model envied by most of the rest of the world, and I think that many other (especially third world) countries will be confronted with similar decisions of economic development versus conservation of habitats and animals,

and the response will be the same. From now on we will have to choose which animals will be allowed to live on the planet with us, and baiji got cut in the first round. It is a sad day. I know it is their country, but the planet belongs to all of us. We came to say goodbye to baiji, but after its being in the river for 20 million years, we apparently missed it by two years.

Sorry if I got a little emotional here, but the disappearance of an entire family of mammals is an inestimable loss for China and for the world. I think this is a big deal and possibly a turning point for the history of our planet. We are bulldozing the Garden of Eden, and the first large animal has fallen. Robert L. Pitman, NOAA , Fisheries Ecosystem Studies Program (The New York Times, 12/26/2006) submitted by Pete Clason



For Rare Few, Taste Is in the Ear of the Beholder

To some ears, the following Thanksgiving menu sounds — and tastes — absolutely scrumptious: A plump bird stuffed with Stephanie and served with giblet civil, accompanied by marshmallow-topped sweet Londons, a bowl of performs with pearl unions and a serving of steamed microscopes. And, for dessert, city a la mode, followed by a confession. If only you were a lexical-gustatory synaesthete, you could savor those words.

People who have synaesthesia — a rare condition running in families — have joined senses. They may “see” letters, numbers or musical notes as colors — a capital A will be tinged red, or 5 plus 2 will equal blue, or B. B. King will play the yellows.

A rarer few, said Julia Simner, a cognitive neuropsychologist at the University of Edinburgh, involuntarily “taste” words when they hear them. In a study, “The Taste of Words on the Tip of the Tongue,” published in the journal *Nature* today, Dr. Simner reported finding only 10 such people in Europe and the United States.

The condition may sound enviable, but it can be unpleasant. One subject, she said, hates driving because road signs flood his mouth with the flavors of things like pistachio ice cream and earwax. And Dr. Simner has yet to spot a pattern.

For example, the word “mince” makes one subject taste mincemeat, but so do rhyming words like “prince.” Another subject, hearing “castanets,” tastes tuna fish. Another tastes only proper names: John is his corn bread, William his potatoes. They cannot say why, she said. There is no Proustian madeleine moment — the flavors just come. But not all flavors. When Dr. Simner checked her word list for today’s specialties, she came up with the salivary triggers for the meal above. “Stephanie” linked to sage stuffing, “civil” to gravy, “London” to potato, “perform” to peas, “union” to onions, “microscope” to carrots, “city” to mince pie and “confess” to coffee. But, alas, no turkey. Or cranberries. “I can give you a whole fry-up English breakfast,” she said apologetically. “But not a Thanksgiving dinner.”

-By DONALD G. MCNEIL JR., *The New York Times*, 11/23/2006

Biggest Bloom: Superflower changes branch on family tree

Plants with buds the size of basketballs, which open flowers up to a meter across, must be reclassified as relatives of poinsettias, say researchers who’ve examined the DNA of the world’s largest known flowers.

HUGE CHANGE. *Rafflesia arnoldii* ranks as the species with the largest known individual bloom. Smelling of rotting flesh, the meter-wide flower attracts carrion-loving insects for pollination.

For almost 2 centuries, botanists have debated where rafflesia plants, with their odd flowers, sit on the plant family tree. Early observers asked whether they were flowering plants or fungi. Later, botanists disagreed about the plants’ nearest relatives. Some pointed to passionflowers, with their elaborate collars and fused sex organs, while others argued for pipevines, with their big, meat-colored flowers. Now, after analyzing eight genes, Charles C. Davis of Harvard University and his colleagues put the rafflesias in other company. The closest relatives of rafflesias lie in Euphorbiaceae, the family of poinsettias and castor beans, the researchers say in a paper released online by *Science*.

Although holiday decorators may think of poinsettias as big flowers, botanists see all that red fandangle as bracts, or modified leaves, that surround tiny true flowers. The Euphorbiaceae family includes plenty of other tiny flowers, and the species within it that Davis and his colleagues have identified as the nearest relatives of rafflesias have blooms only a few millimeters across. Davis calculates that some little dot of an ancestor started a 79-fold size increase during the past 46 million years to yield the modern champ *Rafflesia arnoldii*. Rafflesias have also evolved into parasites without true roots or leaves, and as such provide a huge challenge for gardeners trying to grow them (SN: 9/11/99, p. 172). Davis says that he knows of only four botanic gardens that have successfully grown any rafflesias. People sometimes confuse rafflesias with the big, smelly *Amorphophallus* corpse lily, Davis says. However, the corpse lily isn’t a single flower but instead a blooming spike a meter or so long covered with hundreds of tiny flowers. Davis’ new assertion is a surprise, says Todd Barkman of Western Michigan University in Kalamazoo. He does agree that rafflesias belong on the big evolutionary tree branch occupied by the order Malpighiales, which includes the family Euphorbiaceae. He and his colleagues published that conclusion, based on a DNA analysis, in 2004. However, Barkman says that flower structures don’t suggest to him that rafflesias are close to poinsettias and castor beans. “No botanist in their right mind would have accepted a bet that among the 38 families of Malpighiales, it would be the Euphorbiaceae,” says Susanne Renner, the systematist who directs the Munich Botanical Garden. It’s not clear whether the new results will lead to renaming the storied family Rafflesiaceae. “That would really bristle some people,” says Davis. “They’re our charismatic megafloora.”

By Susan Milius, *Science News*, 1/13/2007; Vol. 171, No. 2, p. 21



Registration form for Spring Conference

Name _____ Guest _____

School _____

Friday night only, including dinner: \$20. X _____ (number attending) = _____

Saturday only, including breakfast & lunch: \$20 X _____ (number attending) = _____

Entire weekend: \$30 X _____ (number attending) = _____

Are your dues up to date? (full time = \$20; part time or retired = \$10) _____

total enclosed: _____

Please submit to: Lynnda Skidmore
31639 Auburn
Beverly Hills, MI 48025

Upcoming Conference Schedule:

Fall 2007: Alpena CC
contact: Deb Hautau & Mark Milostan

Spring 2008: Montcalm CC
contact: Heather Wesp

Rare falcons spotted in Bay City

State wildlife officials and local bird lovers are hoping that a pair of rare peregrine falcons that have been spotted hanging around on a clock tower at the City Hall will find the city hospitable enough to stay and build a nest...The first peregrine, which is listed as endangered in Michigan, was first spotted by a birder on Dec. 30 on the tower in downtown Bay City, where the bird has remained ever since. A second, possibly a mate, was seen a few days later...The gray birds are the size of a crow and have a wing span that can reach almost four feet. In urban areas, they feed on pigeons and starlings...Historically, there were 13 known nesting sites in Michigan, mostly in the cliffs of the Upper Peninsula, before the falcon's numbers were decimated during the 1950s due to the widespread use of the pesticide DDT, which weakened the bird's egg shells. Reintroduction efforts by the state in the 1990s led to nesting pairs being discovered in Detroit, Lansing and the U.P., according to the state's Department of Natural Resources Web site..."It's really exciting," longtime birder Joe Soehnel of Hampton Township told The Bay City Times for a Sunday story. "In Europe, they have nested on castles and cathedrals. City Hall has a beautiful Romanesque architecture and this would be fantastic if they lingered long enough and opted to stay..."The birds' presences have attracted plenty of onlookers, and photos of one of the birds have been posted on the Saginaw Bay Birding Web site...Ray Rustem, a supervisor for the DNR's Natural Heritage Unit in Lansing, said about 20 pairs of peregrines are currently nesting in the state, including atop buildings on the University of Michigan and Michigan State campuses...Rustem said the Bay City Hall falcon may be a female trying to attract a mate. If it stays, he said it will likely establish a nest around the end of February. -picture from www.nature.ca THE MANISTEE NEWS ADVOCATE 1/15/2007



Toledo Trip Planned for May 18 & 19

The trip to Toledo, Ohio is approaching. The weekend of May 18-20, members of MCCB and their families and guests will visit the Toledo Zoo and Oak Openings. Lodgings are at the Quality Inn Airport in Holland Ohio. I have blocked 12 rooms on both Friday and Saturday night. Rooms which have not been booked by 10 days prior to the trip will be cancelled. If you would like to come on the trip, please call 1-419-867-1260 to reserve your room for one or both nights. Mention the group "MCCB" or my name "Susan Starr" to get the group rate of \$50 per night per room, single or double occupancy (\$5 extra per each extra person). There are 4 rooms with 2 double beds and 8 king rooms. On Saturday morning we will travel to the Toledo Zoo where we will tour the Aquarium with Jeff, the Curator of Fishes. If you have never been to the Toledo Zoo, you are in



Karner Blue Butterfly on
Coreopsis flower

for a treat. Visit their website at www.toledozoo.org for maps, events, and previews of the exhibits. In order to qualify for group admission rates (\$8/ adults, \$6/ children and seniors 60+) we have to purchase in advance, so please contact me by May 3rd at biologysusie@yahoo.com if you plan on attending. On Sunday we will visit Oak Openings Preserve, a Toledo area metropark. The area is home to Prickly-pear cactus, wild lupine and sand cherry on sand dunes just yards away from orchards growing in low, wet swales. The richly diverse area west of Toledo provides habitat for the federally endangered Karner blue butterflies (at this time in May we may be able to find them). It is a birder's paradise; the nesting place of bluebirds, Lark sparrows indigo buntings, whippoorwills as well as an excellent location to see migrating songbirds in the spring. - at least 180 rare species in all, more than any other region its size in Ohio. The website for Toledo area Metroparks, is <http://www.metroparkstoledo.com/metroparks/oakopenings/>.

Alien Alert: Shrimpy invader raises big concerns

In November, an unusual swarm of tiny critters caught the attention of a crewmember on a National Oceanic and Atmospheric Administration boat docked in a Lake Michigan channel. He asked Steven Pothoven of NOAA's Great Lakes environmental field station at Muskegon, Mich., what the critters were. "I could see they weren't fish, so I netted some," the biologist recalls. Under magnification, the half-inch-long animals appeared to be crustaceans known as mysid shrimp. But "they couldn't be the native mysid," Pothoven realized, because those are cold- and deep-water denizens, not shoreline dwellers. Within about a week, scientists at another federal lab identified the shoreline crustacean as a new invader, the warm-water species *Hemimysis anomala*. It's native to rivers in Eastern Europe's Ponto-Caspian region, also the home of zebra mussels. This week, NOAA received a report of "large concentrations" of *Hemimysis* that appeared to be reproducing in southeastern Lake Ontario. From the 1970s through the 1990s, waves of notorious Ponto-Caspian species entered the Great Lakes in ships' ballast waters. In 1998, Anthony Ricciardi and Joseph B. Rasmussen of McGill University in Montreal predicted 17 additional Ponto-Caspian species that they worried were poised to invade North America via the Great Lakes. *Hemimysis* is the first animal on that list to show up. "I predict it will be a highly disruptive species," says Ricciardi. He points out that the mysid voraciously consumes microscopic animals at the bottom of the food chain, which are dietary staples for many young fish. David Reid, director of NOAA's National Center for Research on Aquatic Invasive Species in Ann Arbor, Mich., says that he's virtually certain that transatlantic cargo ships picked up *Hemimysis* in ballast water in Europe. Ironically, he adds, the species probably arrived on ships that had dumped ballast water before leaving Europe. However, those ships, called NOBOBs, for "no ballast on board", still carry dozens of gallons of water at the bottom of their ballast tanks. Since the mid-1980s, roughly 90 percent of saltwater ships entering the Great Lakes have been NOBOBs, Reid says. Guidelines now recommend that NOBOBs flush their ballast tanks with salt water to kill freshwater stowaways before entering the Great Lakes. If they don't "swish and spit," Reid says, they can release European invaders as the ships pick up and release ballast water while offloading and taking on cargo in the Great Lakes. Although *Hemimysis* deprives some young fish of food, it could be a new menu item for larger Great Lakes fish, Ricciardi says. However, as a new link in the Great Lakes food chain, Ricciardi worries, the fatty crustacean could boost concentrations of pollutants such as polychlorinated biphenyls in the larger fish. Ricciardi says that *H. anomala*'s small size and innocent look shouldn't fool anyone. "This is not a species to ignore." -Janet Raloff, Science News



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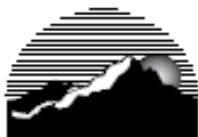
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