UK UNIVERISTY of KENTUCKY DEPARTMENT of ENTOMOLOGY

WEE BEASTIES

ENTOMOLOGY NEWSLETTER FOR EDUCATORS FALL 2002

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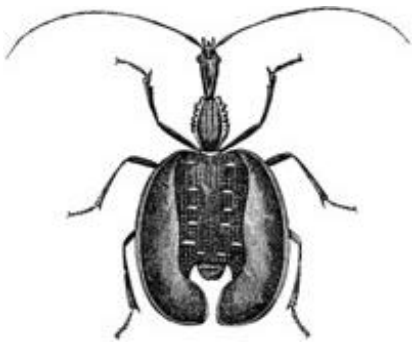
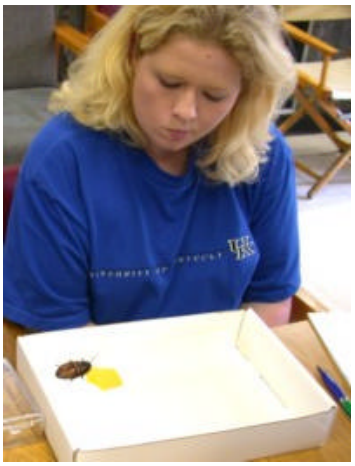


2002 IDENTIFYING WITH INSECTS WORKSHOP



This summer, Kentucky Science Teachers and Extension Agents had a chance to get up-close and personal with arthropods at the 2002 Identifying With Insects Workshop. The workshop was held at the Maywoods Environmental Laboratory near Berea, Kentucky, a fantastic place to experience insects in a variety of habitats.

During the two-day workshop, attendees got tips on how to use insects for inquiry-based classroom projects. In particular, participants designed and tested several different experiments using roly-polies and giant hissing cockroaches! Giant cockroaches? Who would've thought learning about bugs could be this much fun?

Participants also had the chance to make an insect collection, which is probably the best way to learn the principals of insect identification. It's also fun: several participants at the workshop actually collected more insects than we asked them to. How often do students do *more* than you ask them to?

We're planning more workshops in the coming months. If you would like more information about future workshops, see below for contact information!

Activity: BUG MUSIC

I don't think Hank done it this way.

Singin' ain't just for us person-type-folks. Insects enjoy hollerin' a tune every now and then, too. If'n you've ever heard crickets on a summer night, you know what we mean. But did you ever try figurin' out why insects like to make such a dag-blamed racket?

As you may know, many kinds of insects make noises during courtship. It's a big world for bugs, and sound helps them find each other. But insects don't just use sound for mating. They use sound to communicate all kinds of information. An important example: many insects can produce unique sounds that they use like a code to recognize members of the same species. This is especially useful for social insects (like termites) that live and work together.

BUG MUSIC, cont.

If you put on your thinkin' cowboy hat, you'll see that this is an easy principal to demonstrate for students. All you need is a few black plastic 35mm film canisters (or other small, opaque containers). Then, depending on how many students you have in class, fill the canisters with items that will make a distinct noise when the canisters are shaken. Don't make each canister sound the same, instead, make small groups of the canisters, and give each group of canisters a unique sound. Make enough canisters so that each student gets one.

For example, if you have 20 students in class, make 20 canisters. Fill 4 with BB's, 4 with paper clips, 4 with gravel, and 4 with pennies. Make sure to secure the lids so that the students can't look inside. Then randomly give out the canisters and instruct the students to find the other members of their "species" by walking around and listening to everyone's canisters when they are played "maraca-style." In a few minutes they will all find each other.

Depending on the age of your students, you can make the exercise easier or harder by making the canisters that correspond with each "species" sound more or less alike (this will take some experimenting!). Or, for an even more interesting activity, figure out a way to incorporate rhythms into the codes- the big challenge there will be teaching the rhythms to individual students without giving away which group is which. And the more students, the more fun the exercise is, so be sure to invite neighboring classrooms!

UPCOMING EVENTS

The Entomology Department will be present with displays, insects, and information at the following events and locations in 2002:

DATE	TIME	PLACE/EVENT
Sept 28	11 am – 4 pm	Museaum-Go-Round at Woodland Park, Lexington
Sept 28	5 pm – 7 pm	Trees, Trails, & Creatures at the Lexington-Fayette Co. Arboretum
Oct 4	2 pm – 4 pm	Lexington Children's Museum
Oct 12	11 am – 4 pm	Salato Wildlife Education Center, Frankfort
Oct 19	10 am – 2 pm	Junior Arbor Day at the Salato Wildlife Education Center, Frankfort
Oct 25	7 pm	All About Moths at the Lexington-Fayette Co. Arboretum

Tell your students or their parents about these events, or plan a field trip and join us!

DID YOU KNOW?

- The butterfly featured at the head of this newsletter is called a "hairstreak." Hairstreaks are in the "Lycaenidae" family of butterflies. This family also includes blues, coppers, and other small butterflies. As a group, Lycaenids are called "gossomer-winged" butterflies.

  Visit the North American Butterfly Association website for more pictures of gossomer-winged butterflies: **www.naba.org/images/lycaenidae/lycaenidae.html**

- Most people know that Kentucky has two spiders that are considered dangerous: the black widow and the brown recluse. A bite from either of these spiders should receive medical attention. Most other spiders are not dangerous to people. But even though they aren't *dangerous*, almost all spiders are *venomous*. Most spider species have fangs that can inject venom (only a few rare spiders don't).

  In most species, the venom is usually just strong enough to kill or paralyze the tiny arthropods that make up most of a spider's diet. So even though most spiders aren't harmful to people, almost all of them use chemical weaponry to catch prey.

  Read more about Kentucky spiders in our *Common Spiders Found Around Homes and Buildings* Entfact at:
  www.uky.edu/Agriculture/Entomology/entfacts/struct/ef622.htm

- Some of the "bees" that you see flying around your garden aren't really bees at all. Many of them are convincing "bee mimics." There are many kinds of flies that look and act almost exactly like bees. They hover, they feed on nectar, they pollinate plants, and they even have the familiar black and yellow color patterns that we associate with bees. So how do you tell the difference between bee flies and real bees? Well, since bee flies are flies, they only have two wings. All flies (order Diptera) have just two wings, and all bees (order Hymenoptera, which also includes ants and wasps) have four wings. Also, bee flies cannot sting. Stingers are unique to bees, ants, and wasps. Another big difference: bees have chewing mouthparts- mandibles that can grind food. Bee flies have sucking mouthparts that are only used for consuming liquid food.

  Pictured below are a honeybee and a bee fly. Which one is which? And why would a fly want to look like a bee?

BOOK REVIEW

Buzzwords: A Scientist Muses on Sex, Bugs, and Rock'n'Roll

by May R. Berenbaum

Remember the guy playing chess with beetles in *Silence of the Lambs*? The character's name was Noble Pilcher, and he was an entomologist. He was also a big geek. Pilcher was in the movie for only a minute or two but people seem to remember him very well. Worse, they seem to associate him with all entomologists. Does the public really think that insect enthusiasts are socially inept wierdos who spend their time developing rules for insect board games?

This is the kind of topic covered in *Buzzwords*, a collection of columns by entomologist May Berenbaum. Noble Pilcher from *Silence of the Lambs* may be the world's most famous entomologist, but the world's second most famous is probably May Berenbaum (who also has the distinction of being non-fictional). She is the head of the Department of Entomology at the University of Illinois at Urbana-Champaign. During her tenure as a research scientist, she has done important and interesting work dealing with the evolutionary interactions between insects and plant phytochemicals. She has also made numerous television appearances and has written several popular books about insects, including *Bugs in the System* and *Ninety-Nine Gnats, Nits, and Nibblers*. The columns in *Buzzwords* combine Berenbaum's views on entomology, science, and life, with an omnipresent sense of humor. Topics range from the portrayal of entomologists in the media to the problems of teaching science to young people. There is even a whole article devoted to pop's premier parody songwriter, Weird Al Yankovic.

As with books like *Naturalist* by E.O. Wilson, *Buzzwords* offers readers a unique peek inside the mind of a full-time scientist, and is well written. Be warned, however, that the material in this book was drawn entirely from columns written by Berenbaum for *American Entomologist*, a scholarly journal for insect biologists. In other words, although the articles have been, according to the preface, "adapted for this book by the expeditious purging of unnecessary jargon and entomological inside jokes," research scientists were nevertheless the original intended audience. So although the articles are humorous, you definitely have to have the *right* sense of humor, and if you read a large chunk of the book in one sitting you may start to feel a little… well, imagine listening to 3 or 4 Weird Al Yankovic albums in a row while cramming for a zoology final. For most folks, Berenbaums's other books, especially *Bugs in the System*, are probably a more interesting read. But if you have an older student who is interested in becoming an entomologist or biologist, or if you would like to know more about what goes on in the head of a research scientist, *Buzzwords* is a great place to start.

VIDEO REVIEW

DEADLY BUGS

Discovery Channel Video

It's getting close to Halloween. Are you looking for that special video to show in class? You know, one that's creepy, gross, and disgusting, but in a way that's, you know, educational and stuff? *Deadly Bugs* has got just what you need: interesting and accurate scientific information about dangerous and nasty creatures. So not only do you get to see bald-faced hornets injecting venom into human skin, you also get detailed life cycle information about those same hornets. Cool!

Deadly Bugs includes reports on a number of dangerous arthropods, including killer bees, ticks, scorpions, and spiders. Not all of the creatures are necessarily *deadly* to humans (false advertising!), but all of them are gross, and that's the most important thing. Did you know that the South American "kissing bug," which transmits the dreaded Chagas Disease, gets it's name because it tends to bite people on the lips? That's gross, but the grossest creature highlighted on the video has to be the so-called "human bot fly," *Dermatobia hominis*. You'll have to watch the video to see what it can do. Let's just say that it's bound to get under your skin.

Deadly Bugs also features interviews with not one, but two insect experts from our region. Robert Hancock from Cumberland College in Kentucky has done extensive research with mosquitoes. On this video, he explains the mosquito life cycle in excellent detail. As a bonus, we get to watch as Dr. Hancock videotapes mosquitoes feeding from his own arm! Also featured is Randy Morgan, one of the curators of Insect World at the Cincinnati Zoo and Botanical Gardens. Randy discusses the "bullet ant," an insect known for its very painful sting. Bullet ants are on display at the Insect World exhibit, so this video would be a great way to preface a field trip to the zoo.

Keep in mind that placing too much emphasis on things "deadly" can lead to a skewed view of nature, so don't let material like *Deadly Bugs* be the only exposure to insects that your students receive. *Deadly Bugs* can, however, be an excellent part of a well-balanced breakfast, or, uh, curriculum.

One beef with *Deadly Bugs*: the VHF copy runs approximately 55 minutes and costs about $20 from **www.Discovery.com**. The 4-volume VHS version of *Insectia*, another Discovery Channel show that we reviewed in our last issue, cost $50 for 5 hours of programming. A much better deal. *Deadly Bugs* is too expensive, especially since it was already broadcast on television. Discovery should bundle *Deadly Bugs* with its sequel (*Deadly Bugs 2*, which we plan to review in a future issue) and sell them both for about $20. (**Please note:** you may need permission from the makers of this and other videos for certain types of classroom screenings. Check appropriate copyright laws!)

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Contact Information:

If you have ideas, experiences, or information that you would like to share or would like information about educational resources available through the University of Kentucky, Department of Entomology, write, phone, or email:

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Other photos courtesy of B. Newton, University of Kentucky