

UK UNIVERSITY of KENTUCKY DEPARTMENT of ENTOMOLOGY

WEE BEASTIES

ENTOMOLOGY NEWSLETTER FOR EDUCATORS

SPRING 2002



CONTENTS

2001 KSTA Conference
Lesson Plan Showcase: Bughunts
Classroom Project: BUGAQUARIUM
Did You Know?
Book Reviews
Video Review
Upcoming Events
Wee Beasties Mailing List



2001 KSTA CONFERENCE

It was great seeing you at the 2001 Kentucky Science Teachers Association Conference last November! We got to meet about 200 Kentucky Science Teachers from lots of different counties. If you were at the conference, you were hopefully able to grab a copy of our Lesson Plan Pack from our booth in the exhibits hall. Some of you also got to participate in our "Bugs in the Classroom" workshop, where we had great fun working through our "Termite Trails" lesson plan. We hope to see you again at the area National Science Teachers Association meeting October 24-26 in Louisville!



Lesson Plan Showcase: BUGHUNTS



Giddy-up, partners. Spring's sprung, and the critters are on the move. So grab yer six-guns. It's time for a bughunt. Heck, you don't even need a sidearm for this bughunt. All you need is a sense of adventure- no yellow-bellies allowed. Two of our latest lesson plans (*Beneficial Bug Hunt* and *The Great Spider Debate*) give you and your students a great excuse to get outside, take in the sun and fresh air, and look around for some insects.

The Beneficial Bug Scavenger Hunt allows students to get to know beneficial arthropods commonly encountered in the urban landscape. If your school has a few flowers and trees on the grounds, you're set, buckaroo. Let the students loose with the checklist and picture sheet that we have made up for you and let them hunt for preying mantids, green lacewings, and other creatures that roost at the top of the arthropod food chain.

The Great Spider Debate is a similar exercise, designed to introduce students to the many different kinds of spiders commonly found in Kentucky. In addition to a "Spider Safari," the lesson plan also asks students to research and debate the different strategies that spiders use to catch food.

Do your students already "know it all" about beneficial insects and spiders? Or are they too young for the ecology and hunting strategy concepts that complicate these lesson plans? If so, these lessons can be easily simplified, or adapted for other groups of arthropods. How about a hunt where the students just write down every insect they see in a garden?

Find these bughunt lesson plans along with other entomology lesson plans at our Teacher/Parent Resource Materials site:

<http://www.uky.edu/Agriculture/Entomology/ythfacts/resourc/resourc.htm>

<http://www.uky.edu/Agriculture/Entomology/ythfacts/entyouth.htm>

Classroom Project: BUGAQUARIUM

Keeping living organisms in the classroom is a great way to get students interested in biology. And one of the easiest ways to keep animals in the classroom is in an aquarium. After water and rocks, fish are probably the most popular things to keep in an aquarium. But here's another option (can you guess what it is?): insects! Aquatic insects make great additions to freshwater aquariums, and they are common and easy to catch in Kentucky streams and ponds in spring, summer, and fall. There are even some in the winter. And most will thrive for quite some time if tossed in with an existing freshwater set-up. Make it a project by having students collect the insects and research how to take care of them. Students could then be assigned to feed the insects and record growth or behavior as time progresses.



Some common predatory aquatic insects include dragonfly and damselfly nymphs, giant water bugs, water scorpions, and predaceous water beetles. Be careful if you put predatory insects in your tank: the big ones will eat your fish (not to mention your other aquatic insects)! Then again, guppies are cheap, reproduce quickly, and make a great food source for most aquatic predatory insects. Many aquatic insect enthusiasts keep a separate guppy breeder tank, just to feed their insects! If you decide to go with the nymphs of damselflies and dragonflies, remember that these creatures will eventually turn into winged adults that will need room in the tank to dry their wings when they emerge, after which they should be released or collected for display.

Other aquatic insects are either scavengers or plant feeders. These will usually be happy with fish food and algae, or they will nibble on common freshwater aquarium plants. Some of these insects include water scavenger beetles and water boatmen. Crayfish, although not insects, are also scavengers, and make fascinating aquarium pets. Watch out though; they tend to rearrange rocks and other decorations to suite their tastes!

If you are interested in using aquatic insects in your classroom aquarium, the Native Fish Conservancy website has an online article entitled *Insects in the Home Aquarium* that goes into greater detail about the care and feeding of these creatures:

<http://www.nativefish.org/Articles/InsectsInAquarium.htm>

Also, check out an article from the Michigan Entomological Society dealing with the collection of aquatic insects:

<http://insects.ummz.lsa.umich.edu/MES/notes/entonotes5.html>

DID YOU KNOW?

- Scorpions are in the water! They are in all kinds of ponds, creeks, and streams right here in Kentucky! Luckily though, "water scorpions" aren't real scorpions. Real scorpions are eight-legged arachnids (close relatives of spiders). Water scorpions are insects in the order Hemiptera, which also includes stink bugs and assassin bugs. Similar to giant water bugs, water scorpions are underwater predators that catch minnows, salamanders, and other creatures with their mantid-like front legs. Although water scorpions can't sting, they can bite, so think twice before you wade through a pond barefoot!

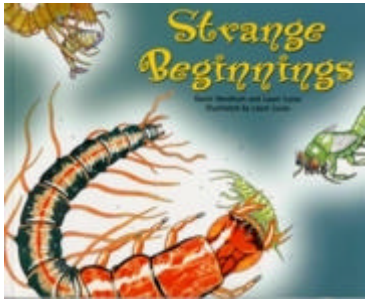


Learn more about water scorpions at:

<http://lupus.northern.edu:90/natsource/INVERT1/Waters1.htm>

- You've probably heard that when honeybees sting, they leave their barbed stingers behind. This allows the stinger to continue pumping venom into the wound. It also kills the bee, because a few internal organs are pulled out along with the stinger. Although this is true for worker honeybees, it is not true for queens: although queen honeybees have stingers, the stingers are not barbed. Also, queen bees have no reason to sting people since they are usually hidden deep inside their hive. But they will use their stingers to kill rival queens!
- The orange and black beetle at the head of the newsletter is called a "swamp milkweed leaf beetle." Although it resembles a lady beetle, the swamp milkweed beetle is really a plant-feeding leaf beetle in the family Chysomelidae. Predatory lady beetles are in the family Coccinellidae. Swamp milkweed beetles are one of the kinds of insects that feed on milkweed plants. The white sap that flows through milkweed plants is toxic to most animals, but the swamp milkweed beetle, the monarch butterfly, the milkweed bug, and a few other insects have evolved ways to resist the toxins. In fact, most insects that feed on milkweed are able to store the toxins in their bodies so that they are protected from predators!

BOOK REVIEWS



Strange Beginnings

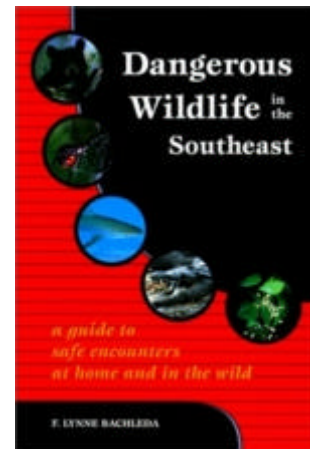
by Karen Needham & Launi Lucas

The world of insects with aquatic lifestages is not often portrayed in children's books. Few kids, or even adults for that matter, have seen the strange and mysterious immature stages of mayflies, dragonflies, and other insects that frequent ponds, lakes, and streams. The illustrations in *Strange Beginnings* are scientifically accurate and beautiful to look at. However, there seems to be some confusion about the intended audience. The format (large print, one or two sentences per page, oversize pages) seems to indicate that it is aimed primarily at young children, but the word complexity is more suitable for middle school, with terms such as metamorphosis, abdomen, and thorax that are not defined or explained. Whereas the text is too technical for younger students, it is not in-depth enough for older kids. In our opinion, the person most likely to appreciate and use this book is the teacher! The illustrations and facts could be very effective as part of a more comprehensive unit covering pond or stream ecosystems.

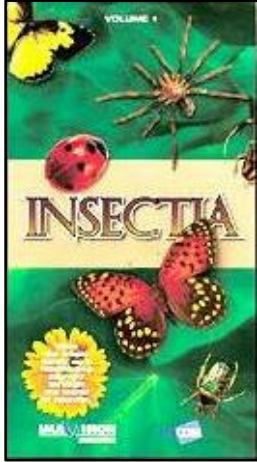
Dangerous Wildlife in the Southeast

By F. Lynne Bachleda

Students in biology classes always have questions about dangerous animals. "Can that snake kill you?" "Do all bees sting?" "Can reptiles carry rabies?" F. Lynne Bachleda provides answers to most of these questions in *Dangerous Wildlife of the Southeast*, a guide to almost every animal or plant in our part of the country (including marine life) that has the ability to cause harm to humans. Included are good photographs of most of these animals and plants, along with information that lets the reader know how dangerous the organisms are, where they are likely to be found, how likely they are to bother you, and what steps to take when an encounter occurs. This book is probably most useful as a field guide for outdoor enthusiasts, but the accuracy and completeness of the information makes it a suitable reference for a life science library. It would also be interesting reading for older students.



VIDEO REVIEW



INSECTIA (Vol. 1-4)

Georges Brossard isn't just the host of *Insectia*, the 13 part insect documentary series that was recently broadcast on Animal Planet. Georges is a real-life adventurer who searches the world for fascinating insects (sort of an entomological Indiana Jones). He is also a great promoter of insects: Georges' efforts led to the creation of one of the world's largest dedicated showcases of insect diversity, the Montreal Insectarium. He was also instrumental in the organization of the new Audubon Insectarium, which is currently under construction in New Orleans.

So this guy loves insects. And that's one of the reasons why *Insectia* is such a success. Not only is it packed full of characters from the arthropod world, its also packed full of Georges Brossard, whose enthusiasm about insects is very genuine, and very infectious. Each episode has a distinct theme, with Georges introducing us to different creatures that illustrate insect evolution, mating, weaponry, and other subjects. Many segments in *Insectia* focus on the interactions between humans and arthropods. Included are detailed reports about insect sculptures, medicines made from insects, myths inspired by insects, and some startling examples of insect jewelry.

The four volume *Insectia* boxed-set that we reviewed contains all 13 episodes, a total of five hours of programming for about \$50. VHS and DVD versions of *Insectia* are available through the Discovery Channel website (www.discovery.com). You can learn more about *Insectia* and Georges Brossard at www.Insectia.com.

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
Apr 6	10am-3pm	BUGZ-ALL-DAY at the Lexington Children's Museum
Apr 20	10am-2pm	Arbor Day at the U.K. Lexington-Fayette Co. Arboretum
July 18	All Day	Field Day 2002 at the U.K. Research and Education Center in Princeton
July 26	8:30pm-10:30pm	NIGHT INSECT WALK at Raven Run Nature Sanctuary, Lexington

Be sure to come to "Bugz-All-Day" at the Lexington Children's Museum and the "Night Insect Walk" at Raven Run. These are our biggest events of the year!

WEEBEASTIES MAILING LIST

Would you like to receive a PDF copy of each fall and spring *Wee Beesties* issue via email as soon as it is printed? If so, send us some email at blnewt00@uky.edu and we will put you on the list! If you don't like PDF, let us know and instead we'll send you a notice and a link to the HTML version of the issue when it is published.

A Note from the Editor:

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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Swamp milkweed leaf beetle photo courtesy of R. Bessin, University of Kentucky

KSTA, giant water bug, and water scorpion photos courtesy of B. Newton, University of Kentucky