



QUOTES

“Most of animal life on Earth is small. Over 90% of known species are smaller than a human finger, smaller, in fact, than your fingernail.”

The Smaller Majority by Piotr Naskrecki

“By and large, people know next to nothing about the most diverse group of organisms ever to evolve, and what they do know comes from negative encounters with a few species of biting flies, “dirty “ roaches, wasps with painful stings, or crop-devouring caterpillars. “

Bringing Nature Home: How You Can Sustain Wildlife with Native Plants by Douglas W. Tallamy

“Ultimately (plants) owe (insects) their very lives, because insects turn the soil around their roots and decompose dead tissue into the nutrients required for continued growth. So important are insects and other land-dwelling arthropods that if all were to disappear, humanity probably could not last more than a few months. Arthropods are thus all around us, life-giving, and we have never taken their measure.”

The Diversity of Life by E.O. Wilson

“While it is almost a universal dream of biologists and weekend naturalists to someday explore a tropical rain forest, it is not necessary to be transported to a jungle to find beauty, view mysterious phenomena, or make new biological discoveries...all exist as close as the nearest woodlot.”

Caterpillars of Eastern North America by David Wagner

“Nothing is more humbling than to look with a strong magnifying glass at an insect so tiny that the naked eye sees only the barest speck and to discover that nevertheless it is sculpted and articulated and striped with the same care and imagination as a zebra.”

Rudolf Arnheim

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REGISTRATION INFORMATION

Limited to 35 participants.
Registration is on a first come basis.

Registration \$100.00
(Includes Insect Collection and Preservation Kit, support materials, lunch on Friday, Saturday, and breaks)

Download registration:
<http://www.grinnell.edu/academic/biology/cera/>
OR use the enclosed registration slip.

Registration questions call:
Laureen Van Wyk at 641-269-4720

Payment: check or credit card. Confirmation will be sent by email on receipt of payment.

Registration due date: June 4, 2010, we will keep a waiting list.
Cancellation policy: 100% refund if you cancel your registration before May 28, 50% refund if you cancel between May 29 and June 4. No refunds after June 4.

Friday night supper on your own. Presenters will be dining at the Best Burger Café located in the gas station at the I-80 exit, just 1.5 miles from CERA. Please join us.

Accommodations:

Motels and campgrounds nearby are filling fast due to an Iowa Speedway race the same weekend. Newton and Grinnell are 10 miles from CERA; Marshalltown is 25 miles.

The Grinnell College Grinnell House has a few rooms that workshop participants can reserve for \$60/night plus taxes. First come first-serve basis: Individuals can contact Conference Operations & Events, Grinnell College, 641-269-3178 to make reservations. Here’s a link for more information:

<http://www.grinnell.edu/offices/collegeservices/guesthousing/>

Camping: Rock Creek State Park, Kellogg, is about 10 miles from CERA. Advance campsite reservations can be made through the park reservation system. Half of the campsites are available on a first-come, first-serve basis.

http://www.iowadnr.gov/parks/state_park_list/rock_creek.html

Driving Directions to CERA:

Take Interstate-80 west from Grinnell (or east from Newton) to Exit 173. Go north on Hwy 224 and take the first gravel road on the right (S 12th Ave. E). Follow it east about 1.5 miles to the main entrance of CERA. Watch for our main entrance sign on the right.

Citizen Science: An Introduction to Insects

June 18 - 19, 2010



Grinnell College
Conard Environmental Research Area (CERA)
11203 S. 12th Ave. E.
Kellogg, IA 50135



CERA, Wigwam Prairie

Sponsored by:
Grinnell College Center for Prairie Studies
The Iowa Living Roadway Trust Fund
Iowa Prairie Network
Iowa Native Plant Society
Iowa Natural Heritage Foundation
Iowa Department of Natural Resources

“The real voyage of discovery consists not in seeking new landscapes but in having new eyes.”

Marcel Proust

WHY INSECTS?

Why is it that when we think of nature, ecology and diversity of species, we think plants, birds, mammals, and maybe reptiles and amphibians? Why is it we overlook insects, in our prairies and woodlands, yards and gardens, except for those 1% of insects we call pests.

Could it be because?

- Insects are small and easily overlooked.
- Insects are cryptic; they can hide or blend in with their surroundings.
- There are so many insect species we don't know where to begin.
- Insects are so diverse, living and feeding nearly everywhere
- Insects have wings which is a marvelous way to escape us.
- Most insects have 4 life stages. Even if we recognize the adult, we probably don't recognize the egg, larva, or pupa let alone anything about their habits.
- Insects are hard to identify to species.

Just because insects are hard to observe, catch, find, ID to species, does not mean they should be ignored. In fact, those are some of the reasons they are so intriguing.

Please, join us for "An Introduction to Insects" as we learn, observe, collect, photograph, and delight in the wonderful world of insects. We hope to begin the process of including insects in your world, insects you have never seen before, right beneath your nose.



Limenitis archippus, viceroys

Suggested reading **before** workshop
Bringing Nature Home by Douglas Tallamy

Insect Collection Kit Provided

Supplies to bring:

- Flash Drive (to download take-home information)
- Laptop (if available) with basic photo program and virus protection
- Digital Camera (including cord to download photos to laptop)
- Field note book, of your choice
- 2 to 5 insects you've collected
- Appropriate clothing - Sturdy Shoes, Long Pants (poison ivy), Insect Repellent (please keep in mind the effects of this on non-target insects) and Rain Gear
- Flashlight and headlamp (for Friday evening collecting)



Colias eurytheme, orange sulphur

Facilitators:

Jonathan (Jackie) Brown: Professor of biology, Grinnell College; ecology and evolution of insects

Steve Holland: Iowa Department of Transportation Living Roadway Trust Fund (ILRTF)

Larissa Mottl: Restoration ecologist; biological field station manager-CERA; Workshop Host

John Pearson: Botanist and Ecologist, Iowa Department of Natural Resources, an editor of Bug Guide

Laura Winkler: Entomology Research

MJ Hatfield: Insect Enthusiast

The **Conard Environmental Research Area** website:

<http://www.grinnell.edu/academic/biology/ceral>

Schedule

Friday June 18

- 8:30 am Introductions:
Facilitators
CERA Facilities
Materials - References and Insect Kit
Field Notebooks - Keeping Records
Questions
- 9:00 Microscope use; insect morphology, ecology, and classification (Orders)
- 10:00 Break
- 10:15 Plants and Insects - John Pearson & MJ Hatfield
Solidago (Goldenrod) galls - Jackie Brown
- 11:15 Practice identifying insects, Recognizing Orders
Lunch
- 1:00 pm Field session: discovery, observation, photography and field collection
CERA: prairie, savannah, & woodland habitats
- 2:45 Break
- 3:00 Demonstration and Practice - MJ Hatfield
Pinning, spreading, labeling and identification
- 5:30 Dinner on your own or with facilitators
- 7:00 Facility open for work;
Pitfall, soapy bowl & Malaise trap collections
- 9:00 Optional evening collecting -
Black lighting, light traps, headlamps and photography



Diptera, Tachinidae (fly)

Unpredictable Weather:
Because weather affects insect activity our schedule may change. We will have plenty of insects pre-collected from CERA



Dectes texanus

Saturday June 19

- 8:00 am Prairie roadsides: habitat for insects - Steve Holland
- 9:00 Introduction to Insect Families - MJ Hatfield
- 10:00 Mound-building ants (*Formica exsectoides* and *Formica montana*) - Jackie Brown
- 11:00 Insect galls - John Pearson
- 12:00 Lunch
- 1:00 pm Field session
- 3:00 BugGuide.net - John Pearson & MJ Hatfield;
Wrap up and evaluation forms

FOR MORE INFORMATION: MJ Hatfield
mjhatfield@oneota.org or phone: 515-450-7430