

THE WAGNER FREE INSTITUTE OF SCIENCE

Fall 2016 Course
ZOOLOGY SERIES
Urban Entomology
Professor Greg Cowper

This course will be held at the **Fishtown Community Branch of the Free Library of Philadelphia**, 1217 E. Montgomery Avenue (just north of Girard Avenue), Philadelphia.

6 Mondays, October 17 to November 21, 2016

LECTURES ARE HELD FROM 6:15 to 7:45 PM

Course Description

This course will serve as an introduction to Entomology—the study of Insects—in the context of urban Philadelphia, its green spaces and disturbed areas. Insects (and related arthropods) collected within the environs of Philadelphia will set the stage for discussion of metamorphosis, morphology, classification and behavior. Knowledge and appreciation of insect diversity in an urban context will be highlighted.

Lectures

1. Monday, October 17, 2016 - Introduction to Insects and their Ways

Anatomy, Development & Metamorphosis, Classification, Nomenclature, the Insect Orders, Making an Insect Collection

2. Monday, October 24, 2016 - Insect Orders

Protura (Proturans), Collembola (Springtails), Diplura (Diplurans), Microcoryphia (Jumping Bristletails), Zygentoma (Bristletails, Silverfish)

3. Monday, October 31, 2016 - The five largest Insect Orders

Coleoptera (Beetles), Diptera (Flies), Lepidoptera (Butterflies & Moths), Hymenoptera (Bees, Wasps, Ants), Hemiptera (True Bugs, Cicadas, Aphids)

4. Monday, November 7, 2016 - Insect Orders, continued

Orthoptera (Grasshoppers, Crickets, Katydid), Blattodea (Cockroaches, Termites), Mantodea (Mantids), Phasmatodea (Walking Sticks), Neuroptera (Rockcrawlers, Mantophasmids)

5. Monday, November 14, 2016 - Insect Orders, continued

Dermaptera (Earwigs), Thysanoptera (Thrips), Trichoptera (Caddisflies), Ephemeroptera (Mayflies), Odonata (Dragonflies), Plecoptera (Stoneflies), Neuroptera (Lacewings, Antlions)

6. Monday, November 21, 2016 - Insect Orders, continued

Siphonaptera (Fleas), Phthiraptera (Lice), Psocoptera (Barklice), Noninsect Arthropods (Spiders, Centipedes, Millipedes), Making an Insect Collection Reprise

November 28, 2016 reserved for make-up class.

Suggested Readings

McGavin, George C. 2001. *Essential Entomology: An Order-by-Order Introduction*. Oxford University Press, 318 pps.

Frank, Kenneth D. 2015. *Ecology of Center City, Philadelphia*, (print edition for sale or a free download at www.fitlersquarepress.com)

Berenbaum, May R. 1995. *Bugs in the System*. New York: Addison-Wesley, 377 pps.

Greg Cowper is an Entomologist at the Academy of Natural Sciences of Drexel University. His interests include Urban Entomology, Biodiversity, the History of Science, the Intersection of Art & Science, Museums & Society, and Collections Stewardship. Current projects include: OrthopNet – combining Southwestern U. S. grasshopper data with associated archival field notes; preparation of South African Grasshoppers for study in the Otte Orthoptera Lab; and *Specimen*, a natural history cabinet of curiosities and artist installation at Eastern State Penitentiary.