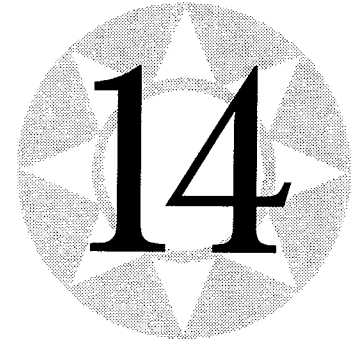


Basic Entomology



Answers to review questions

1. What are the basic differences between insects and humans?*

- Insects are smaller.
- Insects have an exoskeleton; humans have an endoskeleton (*p. 304*).
- Insects often go through metamorphosis; humans do not (*pp. 307–308*).
- Insects and humans have different social organizations.
- Insects and humans have different reproductive strategies.

2. What are the anatomical differences between insects and arachnids?

- Insects have six legs; arachnids have eight (*pp. 303, 306*).
- Insects have three body parts; arachnids have two (*pp. 303, 305*).
- Many insects have wings; arachnids do not (*p. 305*).

3. What does the “ptera” stand for in many insect order names?

Wing. Wings include many insect identifying features—the number of wings, venation, etc. (*p. 305–306*).

4. Why is the type of mouthparts on an insect important?

The type of damage (e.g., chewing versus sucking) depends on the type of mouthparts and helps distinguish which insect is doing the damage on an injured plant (*pp. 307, 309, 342–343*).

5. Arthropods often are classified as beneficial, harmful, or neutral. In which category would you place each of the following and why? (Mark each with B for beneficial, H for harmful, or N for neutral.)*

B Centipede—Beneficial in the Pacific Northwest. In some areas, however, venomous to humans (*pp. 297, 303*).

H Flea—A serious nuisance and vector of disease.

B Bald-face hornet—Major insect predator. They occasionally are in a site where they come into direct conflict with humans, however (*p. 312*).

N Boxelder bug—Merely a nuisance to people who can't stand to share their house walls with insects (*p. 311*).

(continued)

*You may need to use other chapters, additional reference materials, or your own experience to answer this question fully.

Answers to review questions
Chapter 14—Basic Entomology
page 2

- B* Ladybird beetle—Major insect predator. However, Asian ladybirds arouse human ire when they move into buildings (*pp.* 310, 446–449).
- B/H* Earwig—Eats slug eggs and functions in other ways in the environment, but their love of flower petals is a problem (*p.* 310).
- B/H* Ant—Ants in general are among the most efficient insect predators. However, house ants may become a nuisance and get into food, and carpenter ants can cause serious structural damage (*p.* 312).
- H/B* Aphid—On some plants, causes damage and transmits viruses. However, they are a major food source for many beneficial organisms (*p.* 312).
- B/N* Swallowtail butterfly—Because of their beauty, people forgive the occasional larval feeding (*p.* 313).
- B/N* Mantid—Despite being a symbol of predaceous insects, mantids actually are ineffectual and eat both good and bad insects and even each other (*p.* 314).

6. How do insects communicate?*

Various insects use pheromones, sound, light, vibration, and/or visual signals.

7. If a client brings in an invertebrate found in the house, how would you proceed to identify it and to help the client manage the problem?

First determine what type of animal it is (insect, arachnid, etc.). Then narrow it down to order. You'll need a sample and information about where it was found, damage observed, and a history of the "problem." Only after determining whether there really is a problem and identifying the pest can you proceed to suggest management strategies. Most household pests are managed through sanitation and exclusion (*pp.* 309, 342–344).

8. What is the function of insects in the environment? Discuss both their good and bad aspects.

Insects are overwhelmingly beneficial. They:

- Build soil (*p.* 304)
- Pollinate plants (*p.* 304)
- Eat weeds (*p.* 304)
- Kill pest insects (*p.* 304)
- Decompose organic matter (*p.* 304)
- Serve as food for other animals (*p.* 304)

Insects are bad only by human definition. Some:

- Spread disease (*p.* 301)
- Eat crops (*p.* 301)
- Cause a nuisance (*p.* 301)
- Damage structures (*p.* 301)

*You may need to use other chapters, additional reference materials, or your own experience to answer this question fully.

Answers to review questions
Chapter 14—Basic Entomology
page 3

9. Why would it matter if some types of insects were eliminated?*

- The soil would cease to renew itself.
- Waste would build up rapidly.
- Birds would die.
- Food sources for other animals would be severely reduced.
- Food plants and ornamentals would cease to exist due to lack of pollination.
- Much of the beauty and complexity of our world would disappear.

10. What is the significance of metamorphosis?*

It enables arthropods to occupy different niches for food and habitat and permits a wider variation in body types. It is one of the greatest magic tricks in nature, comparable to photosynthesis and seed dormancy.

*You may need to use other chapters, additional reference materials, or your own experience to answer this question fully.