

**Extra Credit Reading**  
*JOURNEY TO THE ANTS*

Name: \_\_\_\_\_

1. What biological traits do the most advanced social insects have?
2. What are “sign stimuli?” Give an example of a sign stimulus.
3. Population biology and ethology are two areas of science besides entomology that affect the study of ants. How do these two areas assist myrmecology?
4. What are the stages of metamorphosis in the insect order Hymenoptera? Describe the larvae stage of ants in a colony.
5. In addition to chemical signals, ants communicate by sound. How do ants produce sound? How is sound used by ants?
6. Many kinds of ants conduct war with colonies both of their own species and of alien species. Describe ant combat.
7. What types of battle tactics are used by ants?
8. How do ants assess enemy strength? Once enemy strength is determined, how do ants use the knowledge?
9. What are the social classes of a *Harpegnathos* colony? How does class behavior affect the colony as a whole?
10. How do ants recognize a stranger in their colony? Where does colony odor originate?
11. Describe the relationship of parasites to ants.
12. What is an army ant? Describe mass raiding.
13. What are the grooming habits of most ants? Why are the *Basiceros* the dirtiest ants in the world?
14. What temperature do most ants require for their habitat? What are some ways they control the temperature of their environment?

15. Most biodiversity studies depend on “focal” groups—mammals, birds, butterflies, and flowering plants. What is the importance of mapping biodiversity? Why are ants a candidate for a biodiversity study?
16. Why is communication important to ants? How has their ability to communicate contributed to their evolutionary success?
17. What did the authors discover when they staged experimental ant wars in the laboratory?
18. Why did American myrmecologist William Morton Wheeler compare an ant colony to a single organism? How is this organism referred to at times?
19. Compare and contrast the two approaches that biologists take in order to study organisms.
20. Describe the “nothing fights” of the Maring tribe of New Guinea. How does honeypot ant behavior resemble this display?
21. What is the Ur-ant? Why is it important to myrmecology?
22. Describe kin selection. How does sex inheritance in ants uniquely affect kin selection?
23. Describe ants’ participation in symbiosis.
24. What kind of consciousness do ants have? How does this affect their behavior?
25. Explain how ants are studied in the laboratory.
26. Did you like this book? Why or why not?
27. What did you learn about the scientific process by reading this book?