

Chapter 33 Comparing Chordates

Section 33–1 Chordate Evolution (pages 849–852)

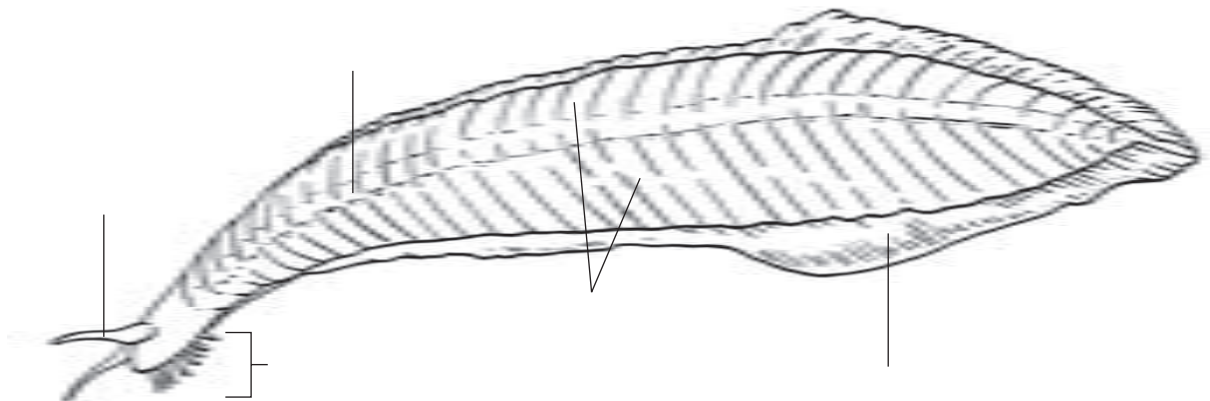
Key Concepts

- What are the roots of the chordate family tree?
- What is a main trend in the evolution of chordates?

Chordate Origins (page 849)

1. Studies of embryos of living organisms suggest that the most ancient chordates were closely related to _____.
2. Why do scientists consider *Pikaia* to be an early chordate and not a worm?

3. In the diagram below, label the notochord, head region, paired muscle blocks, tentacle, and tail fin of *Pikaia*.



4. A flexible, supporting structure found only in chordates is a(an) _____.
5. Is the following question true or false? Scientists study tunicate larvae to better understand the early evolution of chordates. _____

The Chordate Family Tree (page 850)

6. Circle the letter of each sentence that is true about the chordate family tree. (See Figure 33–2 on page 850 of your textbook.)
 - a. Vertebrates share a common invertebrate ancestor with tunicates and lancelets.
 - b. Mammals and fishes share a more recent common ancestor than mammals and birds.
 - c. Lungs evolved before paired appendages.
 - d. Endothermy evolved after the amniotic egg.

Evolutionary Trends in Vertebrates (page 851)

7. What two things do scientists use to study the evolutionary trends in vertebrates?
- a. _____
 - b. _____
8. What effect has the appearance of new adaptations had on the evolution of vertebrates? _____

9. What is convergent evolution? _____

10. When does convergent evolution occur? _____

11. What is one example of convergent evolution? _____

Chordate Diversity (pages 851–852)

12. Is the following sentence true or false? The chordate species alive today are a small fraction of the total number of chordate species that have existed over time.

13. List the six living chordate groups.
- a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____
 - f. _____

Reading Skill Practice

By looking carefully at photographs and illustrations in textbooks, you can help yourself better understand what you have read. Look carefully at Figure 33–3 on page 851 in your textbook. What idea does the photograph communicate?