



Figure 19
Hyoliths were organisms that became extinct at the end of the Paleozoic Era.

End of an Era At the end of the Paleozoic Era, as many as 85 percent of all marine species and 70 percent of all land species died off. **Figure 19** shows one such animal. The cause of these extinctions might have been changes in climate and a lowering of sea level.

Near the end of the Permian Period, all of the continental plates came together and formed Pangaea, and glaciers formed over most of its southern part. The slow, gradual collision of continental plates caused mountain building. Mountain-building processes caused seas to close and deserts to spread over North America and Europe. Many species, especially marine organisms, couldn't adapt to these changes, so they became extinct.

Other Hypotheses Other explanations also have been proposed for this mass extinction. During the late Paleozoic Era, volcanoes were extremely active. If the volcanic activity was great enough, it could have affected the entire globe. Another recent theory is similar to the one proposed to explain the extinction of dinosaurs. Perhaps a large asteroid or comet collided with Earth some 248 million years ago. This event could have caused widespread extinctions just as many paleontologists suggest happened at the end of the Mesozoic Era, 65 million years ago. Perhaps the extinction at the end of the Paleozoic Era was caused by several or all of these events happening at about the same time.

Section 2 Assessment

1. What geologic events occurred at the end of the Paleozoic Era?
2. How might geologic events at the end of the Paleozoic Era have caused extinctions?
3. What advance allowed reptiles to reproduce away from water? Why was this an advantage?
4. What major change in life-forms occurred at the end of Precambrian time?
5. **Think Critically** How, and through what process, did cyanobacteria contribute to the evolution of complex life on land? Do you think cyanobacteria are as significant to this process today as they were during Precambrian time?

Skill Builder Activities

6. **Making and Using Tables** Use **Figure 2** to answer these questions. **For more help, refer to the Science Skill Handbook.**
 - a. When did the Paleozoic Era begin?
 - b. How long did the Silurian Period last?
 - c. When did vertebrates invade dry land?
7. **Using a Database** Research trilobites in a geology book or computer database. Write a paragraph in your Science Journal describing these organisms and their habitat. Include hand-drawn illustrations and compare them with the illustrations in the computer database on geology. **For more help, refer to the Technology Skill Handbook.**