Life of the Past

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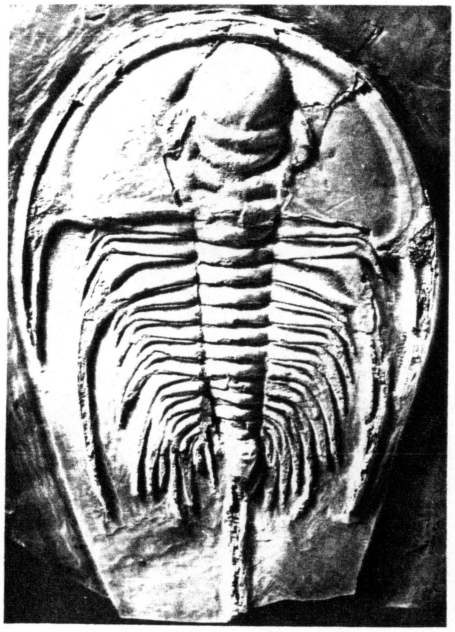

FIGURE 9.3
An early Cambrian trilobite, *Olenellus*, from southern California. The large head and eyes and small tail are typical of many early Cambrian trilobites. The specimen is 12 cm long. (Courtesy of Takeo Susuki, U.C.L.A.)

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Hypotype 2470

that lacked a skeleton, such as the Ediacaran fauna. This is followed by the first shelly fossils that are small, commonly phosphatic, and generally of uncertain affinities. These occur just before the oldest known trilobites.

After the trilobites appear, fossils with skeletons appear regularly in the fossil record until, by the close of the Ordovician Period, almost all major groups of marine invertebrates have appeared. The ammonites and various vertebrate fish groups come on the scene later, as do marine reptiles.

The base of the Cambrian, with the onset of preservable skeletons, marks one of the most important time intervals in geologic history. We will return to this feature a little later in the chapter.

Cambrian Life

Apart from the Ediacaran fauna and the microfossils in the Precambrian, our fossil record for marine communities really begins at the base of the Cambrian rocks and continues without major interruption to the present day. When we first get a good look at marine communities, they are very strange compared to those of modern oceans. Among the first fossils with hard skeletal parts that are likely to be preserved are **trilobites** (Figure 9.3). These are an extinct class of **arthropods**, or jointed-legged animals, related to crabs, lobsters, and shrimp. Arthropods are among the more advanced and complex of any of the various phyla or animals that we call invertebrates—animals without backbones—in contrast to the vertebrates, or animals with backbones. These first trilobites have large eyes and long