FIGURE 5.8.
Coal beds in Lignite Creek, Alaska. (Courtesy U.S. Geological Survey.

waters of the Earth have been recycled since 3.5 billion years ago.

Plate tectonics has enabled us to understand some phenomena that we were formerly unable to explain. For example, movement of continent-bearing plates helps to explain the deposits of coal in Antarctica and Alaska. Since this fossil fuel is derived from organic materials that are normally characteristic of warmer climates, it is assumed that these polar continents must have at one time been closer to the equator. Also, similarities between fossil animals of different continents can now be explained if it is assumed that these continents were once joined together.

Although much ancient geography is unclear, the large continent-bearing plates are thought to have been one coherent land mass or aggregation about 200 million years ago (see figure 5.9). This giant super continent is called *Pangaea* (all lands) and was surrounded by a single world ocean called *Panthalassa* (all seas). The continents then drifted apart to form the world's present seven continents and seven seas.

FIGURE 5.9.
The changing position of the world's continents.