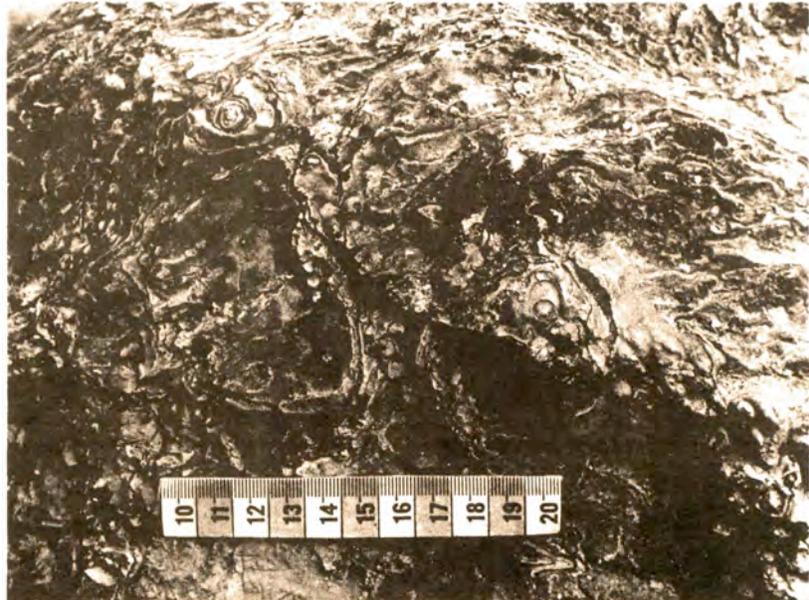


FIGURE 6.1

Oldest known African sedimentary structure of probable biological origin. Concentrically laminated domes appear on eroded bedding surfaces of 3-billion-year-old limestone in northern Zululand. (Courtesy T. R. Mason, Durban, South Africa.)



bodies within these fossil stromatolites indicates the ancient presence of blue-green algae in the waters of the Earth.

Blue-green algae are single-celled microscopic organisms. More than 1500 species are presently in existence exhibiting many different forms and structures (see figure 6.4). Some are present in single cells, others as small colonies, and others as multicellular filaments. Their cell walls are very similar in composition and structure to those of bacteria. In fact, blue-green algae are sometimes called *cyanobacteria* (blue-colored bacteria) because of this close similarity.

Blue-green algae differ from bacteria in one very important respect: blue-green algae are endowed with the remarkable capability of releasing oxygen through *photosynthesis*. (The importance of this

FIGURE 6.2.

Photomicrograph, left, part A, and drawings, right, parts B and C, showing filamentous, bacterium-like microfossil in a petrograph thin section of black chert from the Archean-age Wauawoona Group of Western Australia, about 3.5 billion years old. (Courtesy J. William Schopf.)

