

CHAPTER 6

THE SEEDS OF LIFE

Then God said, "Let the earth sprout vegetation, plants yielding seed, and fruit trees bearing fruit after their kind, with seed in them, on the earth;" and it was so.

Genesis 1:11

At the end of the first billion years of the Earth's history the surface of the planet had been transformed from a naked body of rock to one covered by a shallow sea. This blanket of water was in turn surrounded by a dense atmosphere of carbon dioxide, nitrogen, and water vapor.

At approximately the same time as the first land rose up out of this shallow sea, life made its appearance. This radical new factor -- the appearance of living things -- is so important and its origins so controversial that it will be dealt with at length later in this chapter. First, however, it is necessary to explore what the fossil record has to reveal about the progressive development of vegetation on the planet Earth.

THAT CURIOUS BLUE-GREEN ALGAE

The fossil record of the first life begins 3.5 billion years ago with structural traces of bacteria and bacteria-like blue-green algae, organisms still with us today. Fossil evidence for the possible existence of these microscopic organisms at this early date comes from the sedimentary rocks of western Australia. Examination of thin sections of these rocks under high-powered microscopes has revealed remnants that some scientists have identified as simple filamentous bacteria (see figure 6.2). These remains are identified today by the presence of *stromatolites*. Stromatolites are not actual organisms, but are deposits thought to have been laid down by blue-green algae. We are able to observe blue-green algae laying down similar deposits today in tidal mud flats (see figures 6.1 and 6.3). The discovery of scattered algae