

## CHAPTER 11

# THE EMERGENCE OF MAN

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*Then God said, "Let Us make man in Our image, according to Our likeness; and let them rule over the fish of the sea and over the birds of the sky and over the cattle and over all the earth, and over every creeping thing that creeps on the earth." And God created man in His own image, in the image of God He created him; male and female He created them.*

Genesis 1:26-27

**W**hat is man? What is a human being? At what point did the first human beings appear in the historical fossil record? The scientific answer to this question depends on how one defines "human being."

Anthropologists use the term *Homo* to describe the generic name of various species of erect, large-brained primates. The magic number for brain size (cranial capacity) to be classified as *Homo* is set at 800 cubic centimeters and is the extreme low end of the cranial capacity for humans. The average cranial capacity of human beings is 1350 cubic centimeters, while that of the early hominids and modern chimpanzees is 440 cubic centimeters. Brain cavity size, however, does not really define a human being.

What about tools? The use of tools is another attribute of human beings, but it is not unique to *Homo*. Intricate use and primitive manufacture of tools is a quality that chimpanzees possess. Termite fishing by chimps is a well-documented and elaborate process. Woodpecker finches use cactus spines to probe holes in trees for insects. Off the coast of central California, sea otters use stones to crush and break open clams. Beavers build intricate dams in rivers and barn swallows carry mud to build cone-shaped nests in eaves. The tools of modern man are far more complex, but where is the line to be drawn? Anthropologists draw this line for humans at the point where *consistent* toolmaking is the *primary* adaptation to the environment. While this is a useful distinction, it is difficult to measure in the paleoanthropological record.