



FIGURE 10.1.

The pileated gibbon, a Southeast Asian ape, uses its long arms and fingers to swing through trees. Orangutans are also brachiators. (Courtesy Zoological Society of San Diego.)

However, recent research data has shed new light on the situation, leading us to the possibility of new interpretations of old evidence. Once it was popular to believe that the Earth was flat. Today it is equally important that we open our minds to some new possibilities. First it is necessary to work our way through some scientific terms and information.

## THE PRIMATES

Following the extinction of the dinosaurs 63 million years ago, the Age of Mammals began. Within the class *Mammalia* is the order called *Primates*. The biological classification of Primates includes pre-monkeys, monkeys, apes, and humans.

The earliest primate-like fossils date at about 60 million years ago. Shortly thereafter, two key primate characteristics made their appearance in the fossil record: the opposable thumb, which enables the user to grip branches or food, and stereoscopic vision, in which eyes are placed in the front of the skull rather than to the sides. The possession of stereoscopic vision enables depth perception, which is important in judging distances and heights. This characteristic is vital to survival in the trees of the forest.

The 50-million-year-old fossil pre-monkeys are thought to have been similar to the squirrel-like lemurs of Madagascar and the big-eyed tarsiers of Sumatra and Borneo of today (see figures 10.2). They are known as *prosimians* or the lower primates. The suborder *Anthropoidea* or higher primates consists of monkeys and apes.

Monkeys are considered quadrupeds (four-footed) because they run or scamper very efficiently on their four limbs. The arms of apes, however, are designed more efficiently for swinging. Instead of walking or running along branches as do monkeys, apes swing, hang, or often sit on them.

Apes, particularly chimpanzees and gorillas, are knuckle-walkers when traveling on the ground. They rest their forward weight on the backs of their hands, specifically the middle joints of their fingers. Their posture is said to be semi-erect, and they sometimes stand erect when reaching for fruit or looking over tall grass.

Primitive monkeys and apes appeared in the fossil record more than 25 million years ago, and a progressive increase in size occurred. Primitive apes abounded in the forests until roughly 8 million years ago. At this point, the fossil record vanishes. Modern