

THE XENARTHANS: ANTEATERS, ARMADILLOS, AND SLOTHS

Order Xenarthra

ORDER XENARTHRA

Xenarthra contains four families and three strikingly different groups of living mammals (Fig. 17.1): the true anteaters, Myrmecophagidae; the armadillos, Dasypodidae; and the two families of sloths, Bradypodidae and Megalonychidae. This order was formerly called Edentata, which means “ones without teeth.” Although the diverse groups included in Xenarthra share many defining characteristics, being edentulate is not one of them. Only the anteaters completely lack teeth, a condition they share with several mammals in other orders. The name Xenarthra refers to the accessory “xenarthrous” articular surfaces between vertebrae, primarily in the lumbar area of the spine (Fig. 17.2). These xenarthrous articulations are found in all living members of the order and in most fossil forms as well.

Myrmecophagidae, the anteaters, feed primarily upon ants and termites. It includes three living genera. The giant anteater, *Myrmecophaga tridactyla*, is a large (30–35 kg) terrestrial mammal. Its tongue is about 60 cm long and can be protruded and withdrawn into the mouth up to 160 times per minute (Moeller 1975). The tamanduas, *Tamandua tetradactyla* (Fig. 17.1B) and *T. mexicana* are medium-sized anteaters (3–5 kg) that are both terrestrial and arboreal. The pygmy or two-toed anteater, *Cyclopes didactylus*, is small (500 g) and completely arboreal. Both *Tamandua* and *Cyclopes* have prehensile tails. All of the anteaters have long, slender rostra, very small mouth openings, and long vermiform tongues. Their large foreclaws are used to tear open ant and termite nests.

The Dasypodidae, the armadillos, are terrestrial to fossorial mammals possessing a carapace over much of

the body (Fig. 17.1C). This shell of dermal bony scutes overlain by epidermal scales (see section on scales in Chapter 4) ranges from full dorsolateral armor that completely protects the animals when they roll into a ball (*Tolypeutes*) to one in which the flanks are unarmored, and most of the dorsum is covered only with a thin, loose mantle of soft, highly flexible, armor attached by only a fragile, translucent, middorsal membrane (*Chlamyphorus truncatus*). Most armadillos are only sparsely haired, but the lesser pichiciego, *C. truncatus*, has dense hair, even under its mantlelike dorsal armor. The rare *Dasypus pilosus* has such dense hair over the trunk that its full body armor is concealed. Most armadillos are primarily terrestrial, but all are well-equipped for digging for food and burrowing. The pichiciegos are the most fully fossorial. Armadillos have cylindrical, homodont, ever-growing cheek teeth and no incisors or canines. Deciduous teeth have been recorded only in the genus *Dasypus*. Most armadillos feed exclusively or primarily upon insects, but other invertebrates, small vertebrates, carrion, eggs, fungi, berries, and other plant material may be eaten (Bolkovic et al 1995; Davis 1974; Moeller 1975).

The sloths are arboreal animals with long limbs (see Fig 17.1A), syndactylous toes, and large curved claws used to hang from tree limbs. They are covered by coarse hair that harbors algae growing in grooves in the cuticle. This gives the slow-moving animals a greenish tinge providing protective coloration. Sloths are strictly vegetarian, eating leaves, buds, flowers, and fruit. Incisors and canines are absent, and the cheek teeth are cylindrical, ever-growing, and essentially homodont. The tail is rudimentary. Sloths

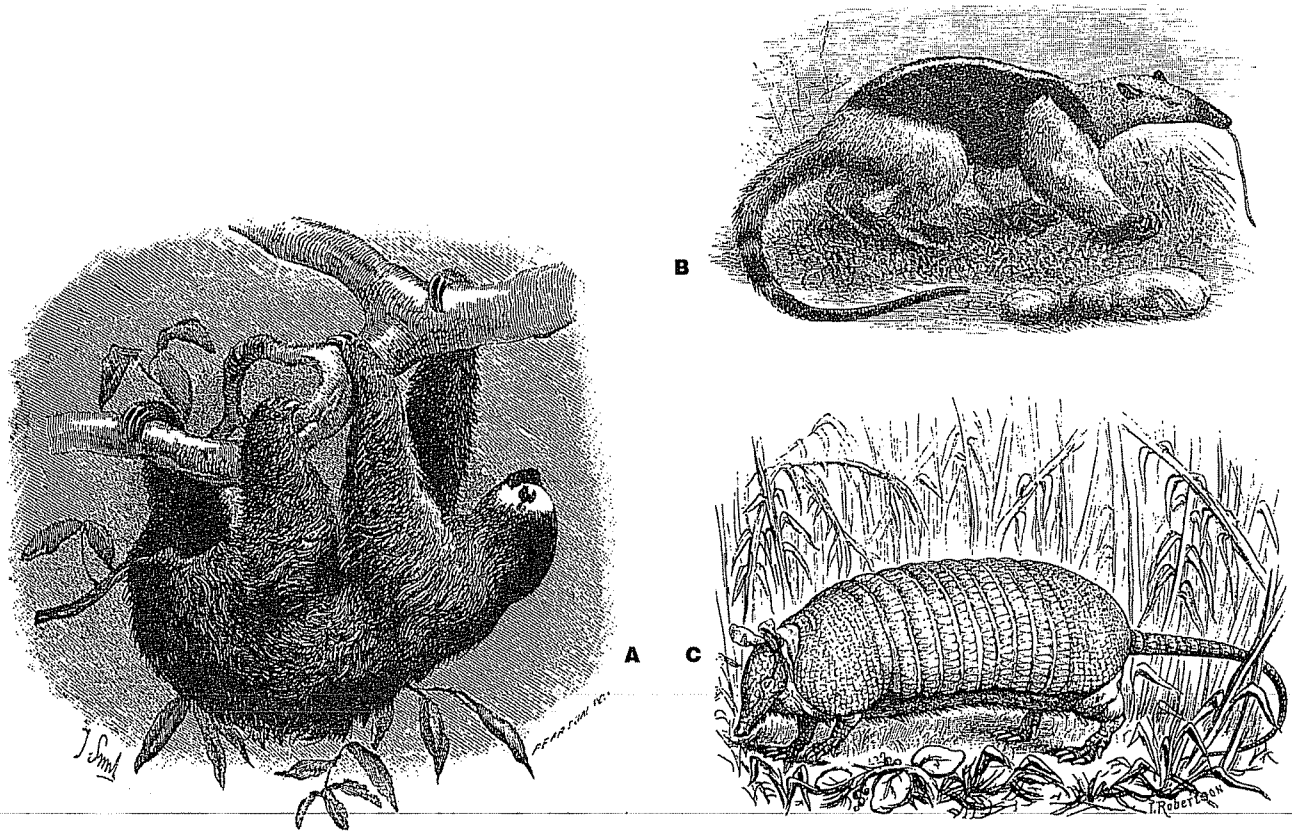


Figure 17.1 Representatives of three of the living families of Xenarthra. (A) A two-toed sloth, *Choloepus hoffmanni*, Megalonychidae; (B) a tamandua, *Tamandua tetradactyla*, Myrmecophagidae; and (C) the nine-banded armadillo, *Dasypus novemcinctus*, Dasypodidae.
(A, Sclater and Sclater 1899; B and C, Flower and Lydekker 1891)

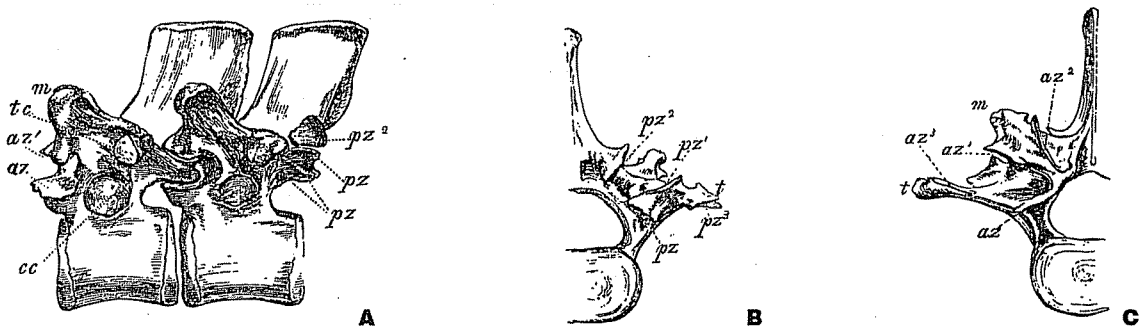


Figure 17.2 Vertebrae of the giant anteater, *Myrmecophaga tridactyla*. (A) Side view of twelfth and thirteenth thoracic vertebrae. (B) Posterior view of second lumbar vertebra. (C) Anterior surface of third lumbar vertebra. az = anterior zygapophysis; az¹, az², az³ = additional (xenarthrous) anterior articular facets; cc = facet for capitulum of rib; m = metapophysis; pz = posterior zygapophysis; pz¹, pz², pz³ = additional (xenarthrous) posterior articular facets; t = transverse process; tc = facet for articulation of tubercle of rib.
(Flower 1885)

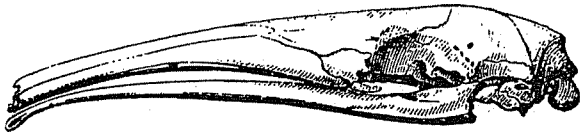


Figure 17.4 Skull of the giant anteater, *Myrmecophaga tridactyla*, Myrmecophagidae. Skulls of *Tamandua* and *Cyclopes* have proportionally, and absolutely, shorter rostra than this. (Owen 1866)

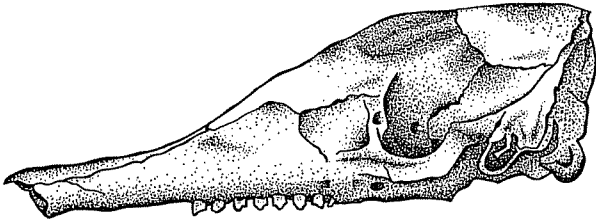


Figure 17.5 Cranium of the armadillo, *Dasypus novemcinctus*, Dasypodidae. (Michael Gilliland)

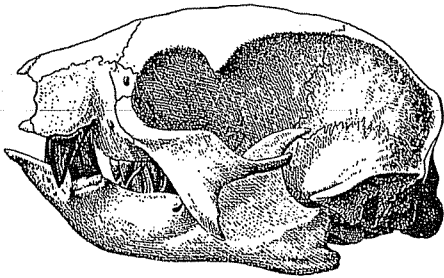


Figure 17.6 Skull of a two-toed sloth, *Choloepus*, Megalonychidae. (Weber 1928)

COMMENTS AND SUGGESTIONS ON IDENTIFICATION

The three groups of xenarthrans are very distinctive and cannot be confused with each other. Sloths are unique in both external and cranial features, and the two families are easily distinguished from each other by the dentition and number of manual digits. The bony shells of armadillos are unique as skin features. Confusion could arise between skulls of large armadillos and those of armadillos, but close examination of teeth easily separates these two groups. The toothless skulls of anteaters could be confused with the toothless skulls of echidnas and pangolins. Methods of distinguishing these three groups are discussed in the chapter on Monotremata.