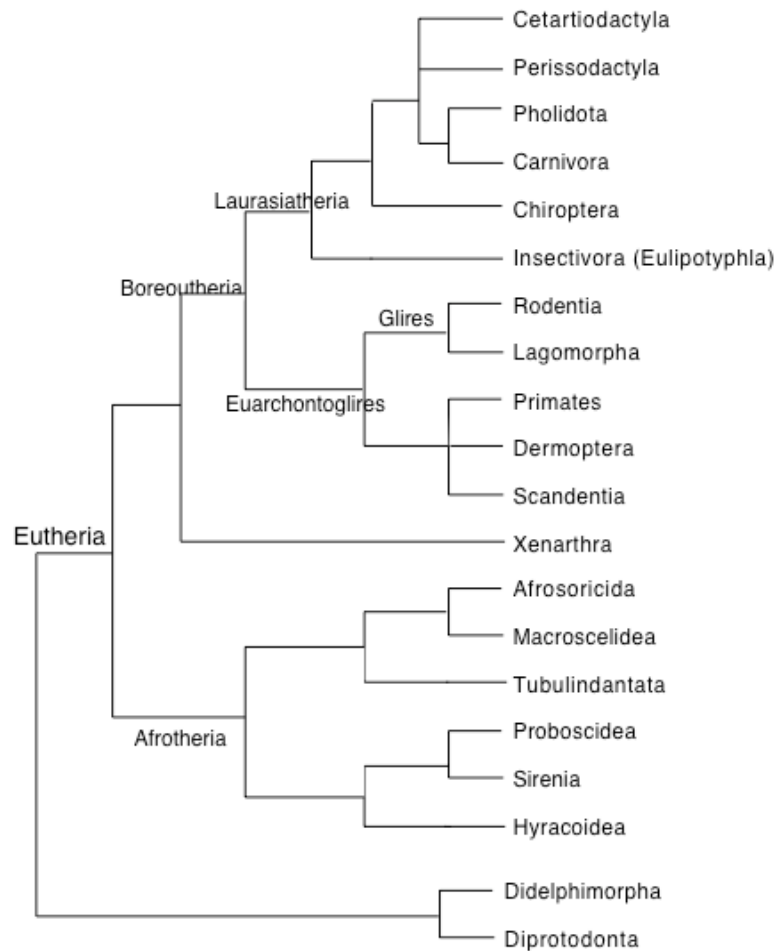


## Eutherian Phylogenetic Relationships

(Madsen, 2001; Murphy et al., 2001a, b)



Madsen et al., 2001. *Nature*, 409:610  
Murphy et al., 2001a. *Nature*, 409:614  
Murphy et al. 2001b. *Science*, 294:2348

I think learning this material is easiest in small batches. The phylogeny above provides a natural means for breaking the 18 eutherian orders up into easily digested chunks.

Start by learning the Afrotheria (this name means “African mammals”). There are six orders, and they form two clades, each with three orders. Don’t worry about naming the clades, but one contains the elephants and their kin:

- Order Proboscidea (named for their trunks, or proboscis).
- Order Sirenia (named for mermaids, or sirens, of Greek mythology).
- Order Hyracoidea (shaped like a hyrax).

The other clade contains three somewhat odd orders:

Order Macroscelida (elephant shrews; “big posterior limbs” named for cursorial adaptations).

Order Tubulidentata (Aardvark; named for their teeth, which are reduced to pegs comprised of tubes of dentine).

Order Afrosoricida (tenrecs & golden moles; this name means “African shrews”. Both groups were formerly classified as relatives of shrews in the family Soricidae).

The next order has no close relatives, but diverged and diversified in South America.

Order Xenarthra (This name means “strange joint” and refers to the additional articulations between vertebrae formed by the xenarthrous process).

The remaining 11 orders are in the group Boreoeutheria, a name that means “northern placental mammals.” This name refers to the likelihood that all originated in the northern hemisphere (although they have dispersed throughout the world). The Boreoeutherian orders are split into two clades, the Euarchontoglires (a truly horrendous name – sorry) and the Laurasiatheria (mammals from Laurasia, the supercontinent composed of North America and Eurasia).

The Euarchontoglires contains two clades. The first of these is the Glires, which contains rabbits and rodents.

Order Rodentia (the rodents; this order contains ~45% of all mammals).

Order Lagomorpha (the name means “rabbit shaped”).

The other clade contains Primates and their relatives. (It is the remnant of the old group Archonta - hence the name Euarchontoglires).

Order Primates (since the order includes humans, it’s anthropocentrically considered the prime or highest order).

Order Dermoptera (the gliding lemur; the name means “skin wing”).

Order Scandentia (tree shrews; “scandent” means climbing).

The last group is the Laurasiatheria, which contains six orders.

Order Insectivora (shrews and moles)

Order Chiroptera (bats; the name means “hand wing”)

Order Carnivora (these are primarily carnivorous)

Order Pholidota (pangolins; the word pholidote means scaly).

Order Perissodactyla (odd-toed ungulates; the name means “odd numbered fingers”).

Order Cetartiodactyla (This is an amalgam of two formerly separate orders: the Cetaceans, or whales, and the artiodactyls, or even-toed ungulates).