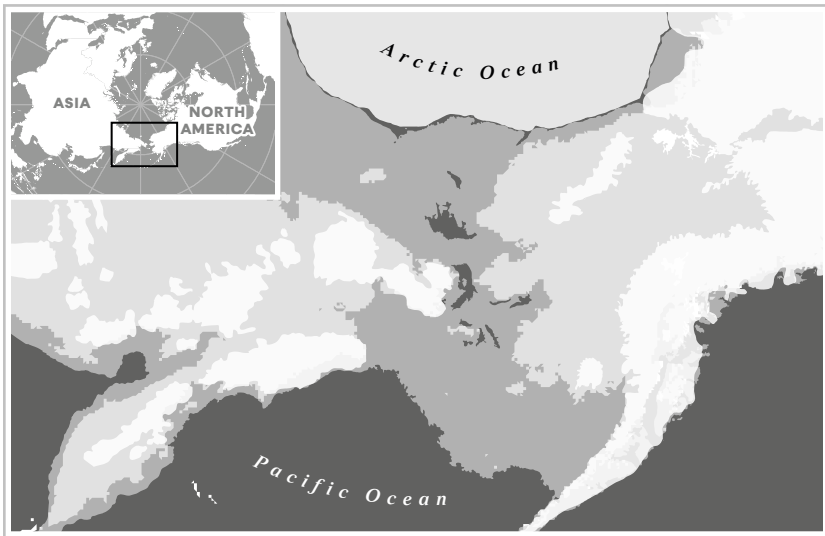


A Hunter- Gatherer's Guide to the 21st Century

Evolution and
the Challenges
of Modern Life

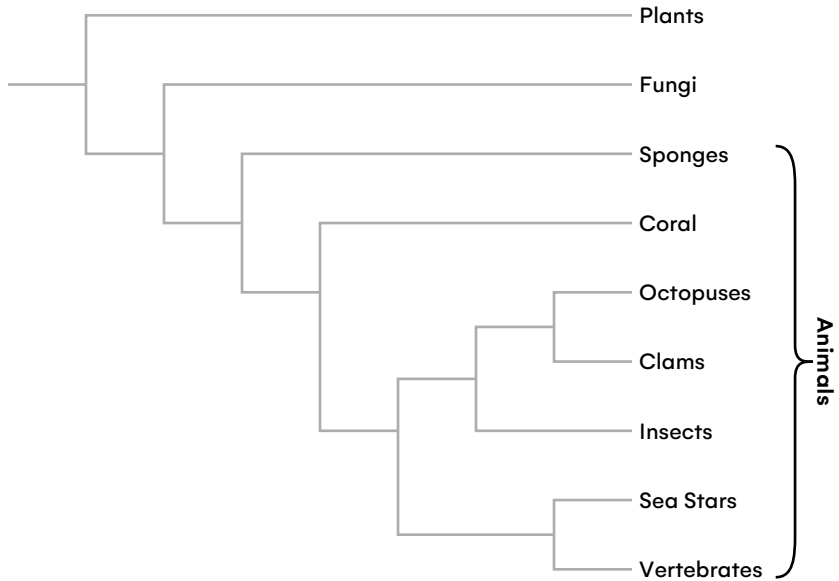
HEATHER HEYING
and **BRET WEINSTEIN**

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Artist's rendering of Beringia based on Bond, J. D., 2019. *Paleodrainage map of Beringia*. Yukon Geological Survey, Open File 2019-2.

A Phylogenetic Tree

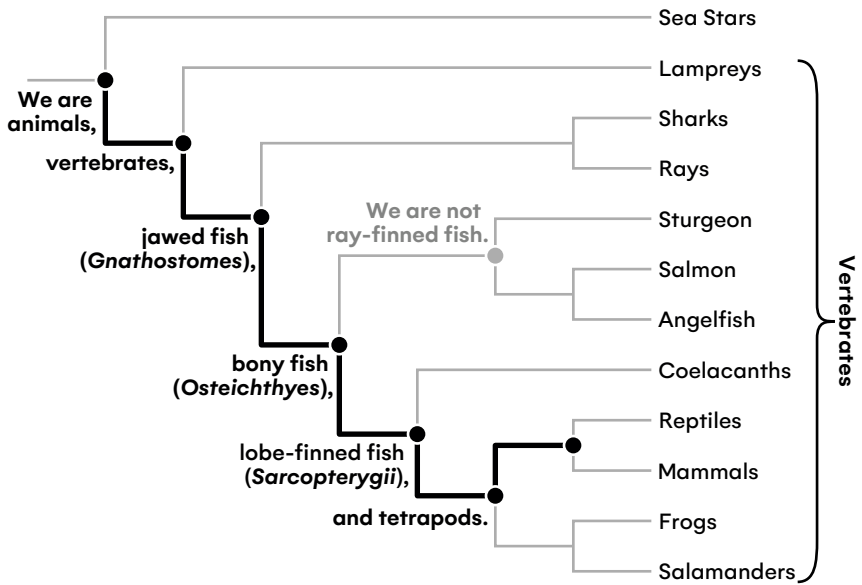


This evolutionary tree reflects our current understanding of the relationships between several extant taxa.⁹ Many taxa are excluded, but the nature of evolutionary trees is that you can exclude taxa without rendering a tree untrue; it's just less complete.

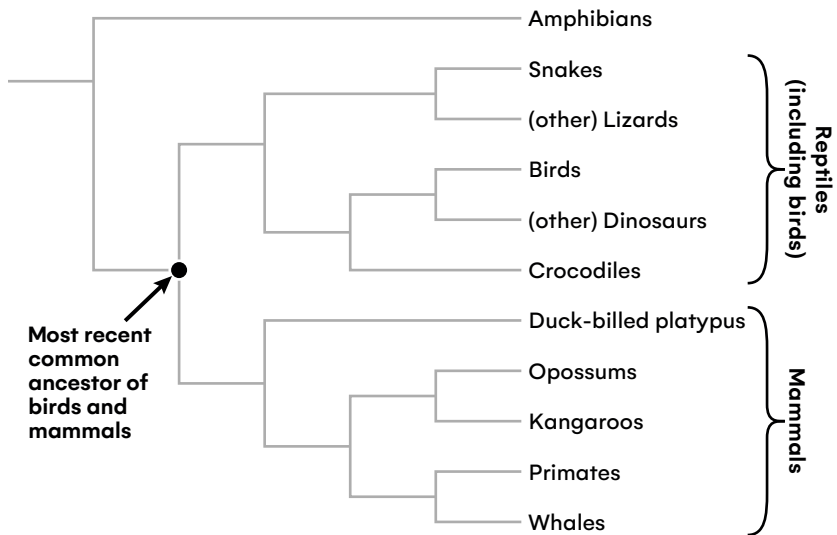
This tree does *not* suggest that vertebrates are “more highly evolved” than anything else on the tree. This tree *does* suggest, among other things, that:

- Vertebrates and sea stars are more closely related to one another than either are to anything else on the tree.
- Clams and octopuses are each other's closest relatives on this tree; insects are closely related to them. Animals and fungi are more closely related to each other than either is to plants.

Vertebrates



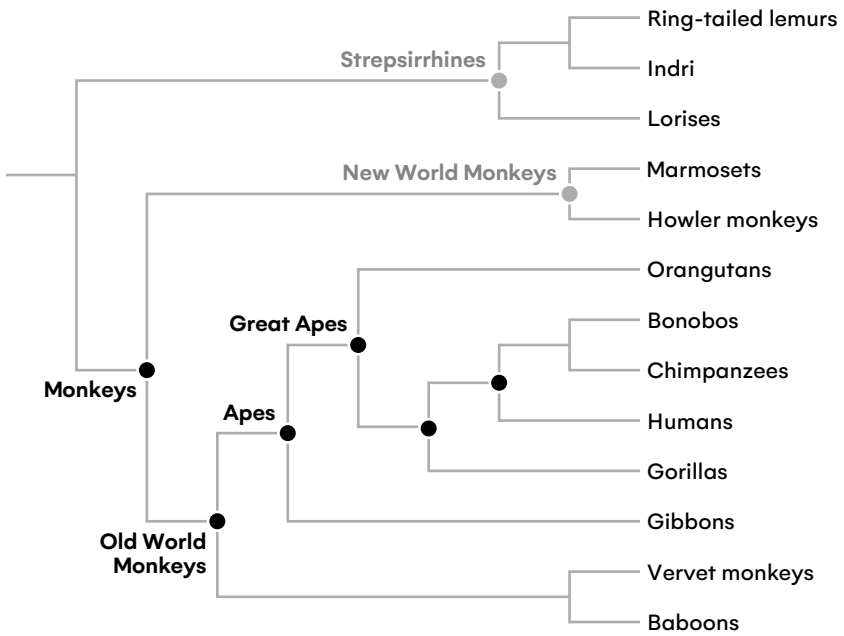
Tetrapods



Relationships between tetrapods are depicted here. Among the reptiles, three relationships are worth special note:

1. Snakes are the largest clade of legless lizards.
2. Birds are the only clade of dinosaurs that did not go extinct sixty-five million years ago.
3. Turtles and tortoises (“Testudines”) are unambiguously reptiles, but who their closest relatives are remains in question, so they are excluded from this tree.

Primates



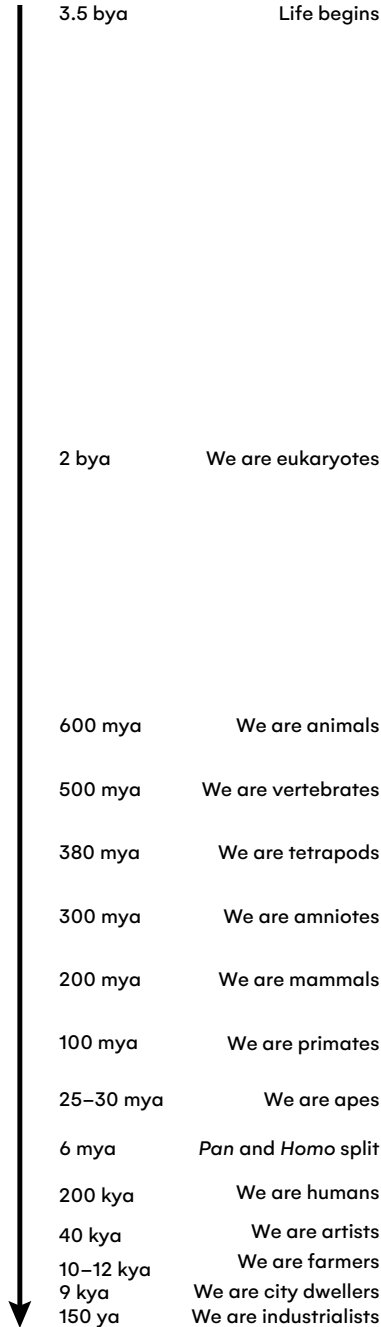
Just as we are animals, vertebrates, jawed fish, bony fish, lobe-finned fish, and tetrapods, we are also primates, monkeys, Old World Monkeys, apes, and great apes.

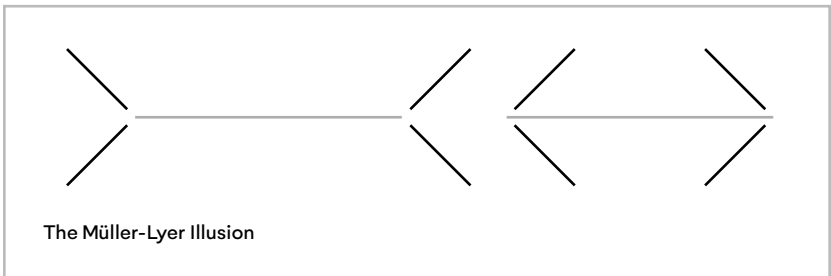
Timeline

Key

bya = billion years ago
mya = million years ago
kya = thousand years ago
ya = years ago

All dates are approximate,
and spacing between
lines imprecise.





Diminishing Return Curves

