Lesson 24: Rise of Mammals

For 160 million years, mammals had lived small and careful in the shadow of the dinosaurs. They were mostly nocturnal, hiding in burrows, eating insects and seeds, staying invisible. They had warm blood, fur, and milk to feed their young, remarkable traits, but not enough to compete with the giants above them. Then the asteroid struck, the dinosaurs vanished, and for the first time in the history of mammals, the world was open.

The result was one of the most spectacular diversifications in the history of life. With countless ecological roles left empty by the dinosaurs, mammals moved in. This rapid spread of one group into many different forms to fill many different roles is called **adaptive radiation**. Some mammals grew large. Some returned to the sea and eventually became whales and dolphins. Some took to the trees. Some evolved into swift grassland runners. In the space of a few million years, extraordinarily fast in geological terms, mammals transformed from a collection of small, cautious survivors into the dominant large animals of the planet.

Three great groups of mammals diversified during this time. **Placental mammals** carry their young inside the body until they are fully developed, nourished through an organ called a placenta. This group includes almost every mammal you have ever heard of: dogs, horses, elephants, bats, whales, and humans. **Marsupials** give birth to very undeveloped young that continue growing in a pouch, kangaroos and koalas are living examples. And **monotremes** are the ancient egg-laying mammals, represented today only by the platypus and echidna, extraordinary animals that remind us how diverse mammalian life once was.

The **Cenozoic Era**, the age of mammals, stretching from 66 million years ago to the present, was just beginning. And within it, one particular lineage of small, sharp-eyed, tree-dwelling mammals was setting the stage for something that had never happened before in the history of life on Earth.

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