The First Animals

All animals share a theoretical single-celled ancestor organism believed to have lived over 4.2 billion years ago. This organism is referred to as the Last Universal Common Ancestor or LUCA. No fossil records of this organism have ever been found, but it is theorized from analysis of the building blocks of DNA that this animal was the most recent organism from which all life formed.

Scientists believe that the first multicellular animals on Earth were a type of sponge or jellyfish that lived in the ocean. Scientists have found evidence of animals living in ancient oceans as far back as 910 million years ago. These early animals resembled jellyfish and sponges that currently exist in our oceans. By comparing the structure of currently living animals to the skeletal remains of these first animals, scientists have concluded that the genetic code of early animals was simple and primitive. Their genetic code served as the building blocks for the rest of the animal kingdom as it grew more complex and diverse. For example, while jellyfish lack a nervous system themselves, they have genetic code that could create components of a nervous system similar to what we see in other animals.

The first animal to transition from the water to land was a millipede-like insect creature called *P. newmani* (Figure 9). *P. newmani* lived approximately 420 million years ago and were the first creatures known to breathe oxygen and walk on land. As most of life was still underwater, moving onto land was advantageous for animals. Land provided a rest from predators and allowed them to diversify their diets to include plant life found on land. The first animals with bones and spines came much later, around 375 million years ago. These animals resembled reptiles or amphibians and lived partially in land and partially in the water. The ability to move between the water and land allowed these early animals to take advantage of insects and plants on land.

FIGURE 9

Pneumodesmus newmani *or* P. newmani *is the oldest known land animal. This millipede-like insect breathed air and existed on land. It was found by the amateur paleontologist Mike Newman in Scotland in 2004. The species was named in Newman's honor but written to fit the Latin naming convention of binominal names.*[9]

Mammals have existed for millions of years. The oldest known mammal was a small, furry, rodent-like creature called Brasilodon that existed approximately 225 million years ago along with dinosaurs. Approximately 7 percent of mammal species survived the mass extinction event that killed the dinosaurs. It is theorized that mammals survived in part due to their robust diets and because their small size allowed them to sustain themselves on food sources that were too small for most other life on Earth at that time.

How Animals Are Classified

Animals belong to the domain of Eukarya (having eukaryotic cells) and the kingdom of Animalia (animals). Every known animal will therefore start with the same domain and kingdom. The phylum rank is where animals start to diversify. Animals with spinal cords, like mammals and birds, belong to the phylum Chordata. Invertebrate animals, or animals without a spinal cord, are dispersed among several different phyla, some only containing a few species.