

# Classification



Classification Why the butterfly belongs to the invertebrates: The first animals to evolve were invertebrates. Fossil evidence of invertebrates dates back to the late Precambrian, 600 million years ago. Invertebrates evolved from single-celled microorganisms. Since then, invertebrates have diversified into countless forms. An estimated 97 percent of all species alive today are invertebrates. Invertebrates are united more by what they lack (a backbone) than by shared characteristics. Invertebrates include animal groups such as sponges, cnidarians, flatworms, molluscs, arthropods, insects, segmented worms, and echinoderms as well as many other lesser-known groups of animals. Scientists are still uncertain exactly how the first invertebrates evolved. Most experts agree that the first invertebrates evolved from single-celled, food-eating microorganisms. Scientists think that these microorganisms formed permanent symbiotic groups and in doing so, they were no longer single-celled, they had become multicellular. When this happened, animals had evolved. Invertebrates do not have bones, a bony skeleton, or a backbone. Instead, they gain structural support for their bodies in different ways. For example, sea anemones have a hydrostatic skeleton that produces support via sheets of muscles and an internal cavity filled with fluid. Other invertebrates such as insects and crustaceans have a hard outer shell or exoskeleton. An estimated 97% of all species alive today are invertebrates. Of all invertebrates, the insects are by far the most numerous. There are so many species of insects that scientists have yet to discover them all, let alone name or count them. Estimates of the total number of insect fall in the range of 1 to 30 million. There are also some 10,000 species of sponges, 9,000 species of cnidarians, 100,000 species of mollusks, and 75,000 species of arachnids in addition to tens of thousands

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of species belonging to other lesser known groups. Butterflies and moth belong to the order Lepidoptera. Lepidos is Greek for "scales" and ptera means "wing". These scaled wings are different from the wings of any other insects. Lepidoptera is a very large group; there are more types of butterflies and moths than there are of any other type of insects except beetles. It is estimated that there are about 120,000 different species of butterflies and moths (divided in over 135 families).