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Animals



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Animal Diversity Web

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It is estimated that around 9 or 10 million species of animals inhabit the earth; the exact number is not known and all estimates are rough. Animals range in size from no more than a few cells to organisms weighing many tons, such as the giant squid. By far most species of animals are insects, with groups such as mollusks, crustaceans, and nematodes also being especially diverse. By this measure our own group, the vertebrates, is relatively inconsequential from a diversity perspective.

All animals are members of the Kingdom Animalia, also called Metazoa. This Kingdom does not contain prokaryotes (organisms made up of cells that lack a cell nucleus or any membrane-encased organelles, such as bacteria and blue-green algae) or protists (Kingdom Protista, which includes unicellular eukaryotic organisms). All members of Animalia are multicellular, and all are heterotrophs (i.e., they rely directly or indirectly on other organisms for their nourishment). Most ingest food and digest it in an internal cavity.

Animal cells lack the rigid cell walls that characterize plant cells. The bodies of most animals (all except sponges) are made up of cells organized into tissues, each tissue specialized to some degree to perform specific functions. In most, tissues are organized into even more specialized organs. Most animals are capable of complex and relatively rapid movement compared to plants and other organisms. Most reproduce sexually, by means of differentiated eggs and sperm. Most animals are diploid, meaning that the cells of adults contain two copies of the genetic material.

The development of most animals is characterized by distinctive stages, including a zygote, formed by the product of the first few divisions of cells following fertilization; a blastula, which is a hollow ball of cells formed by the developing zygote; and a gastrula, which is formed when the blastula folds in on itself to form a double-walled structure with an opening to the outside, the blastopore.

Research continues on the evolutionary relationships of the major groups of animals. For the sake of convenience, the Animal Diversity Web follows the system outlined in Hickman and Roberts (1994). For some groups we incorporate the results of current research in our classification and discussion.

References

Hickman, C.P. and L. S. Roberts. 1994. Animal Diversity. Wm. C. Brown, Dubuque, IA.

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