J

joule (J)
A unit of energy: 1 J = 0.239 cal; 1 cal = 4.184 J.

juvenile hormone (JH)
A hormone in arthropods, secreted by the corpora allata glands, that promotes the retention of larval characteristics.

juxtaglomerular apparatus (JGA)
Specialized tissue located near the afferent arteriole that supplies blood to the kidney glomerulus; the JGA raises blood pressure by producing renin, which activates angiotensin.

K

K-selection
The concept that in certain (K-selected) populations, life history is centered around producing relatively few offspring that have a good chance of survival.

karyogamy
The fusion of nuclei of two cells, as part of syngamy.

karyokinesis
Division of the nucleus during the cell cycle.

karyotype
(**kar**-ee-oh-type) [Gk. *kara,* the head + *typos,* stamp or print]
A method of organizing the chromosomes of a cell in relation to number, size, and type.

keratin
[Gk. *karas,* horn]
One of a group of tough, fibrous proteins formed by certain epidermal tissues and especially abundant in skin, claws, hair, feathers, and hooves.

keystone predator
A predatory species that helps maintain species richness in a community by reducing the density of populations of the best competitors so that populations of less competitive species are maintained.

keystone species
A species that is of exceptional importance in maintaining the species diversity of a community; when a keystone species is lost, the diversity of the community decreases and its structure is significantly altered.

kidney
In vertebrates, the organ that regulates the balance of water and solutes in the blood and the excretion of nitrogenous wastes in the form of urine.

kilocalorie (kcal)
A thousand calories; the amount of heat energy required to raise the temperature of 1 kg of water 1°C.

kin selection
A phenomenon of inclusive fitness, used to explain altruistic behavior between related individuals.

kinesis
(kih-**nee**-sis)
A change in activity rate in response to a stimulus.

kinetic energy
(kih-**net**-ik) [Gk. *kinetikos,* putting in motion]
The energy of motion, which is directly related to the speed of that motion. Moving matter does work by transferring some of its kinetic energy to other matter.

kinetochore
(kih-**net**-oh-kor) [Gk. *kinetikos,* putting in motion + *choros,* chorus]
A specialized region on the centromere that links each sister chromatid to the mitotic spindle.

kingdom
A taxonomic category, the second broadest after domain.

Koch's postulates
A set of four criteria for determining whether a specific pathogen is the cause of a disease.

Krebs cycle
A chemical cycle involving eight steps that completes the metabolic breakdown of glucose molecules to carbon dioxide; occurs within the mitochondrion; the second major stage in cellular respiration.