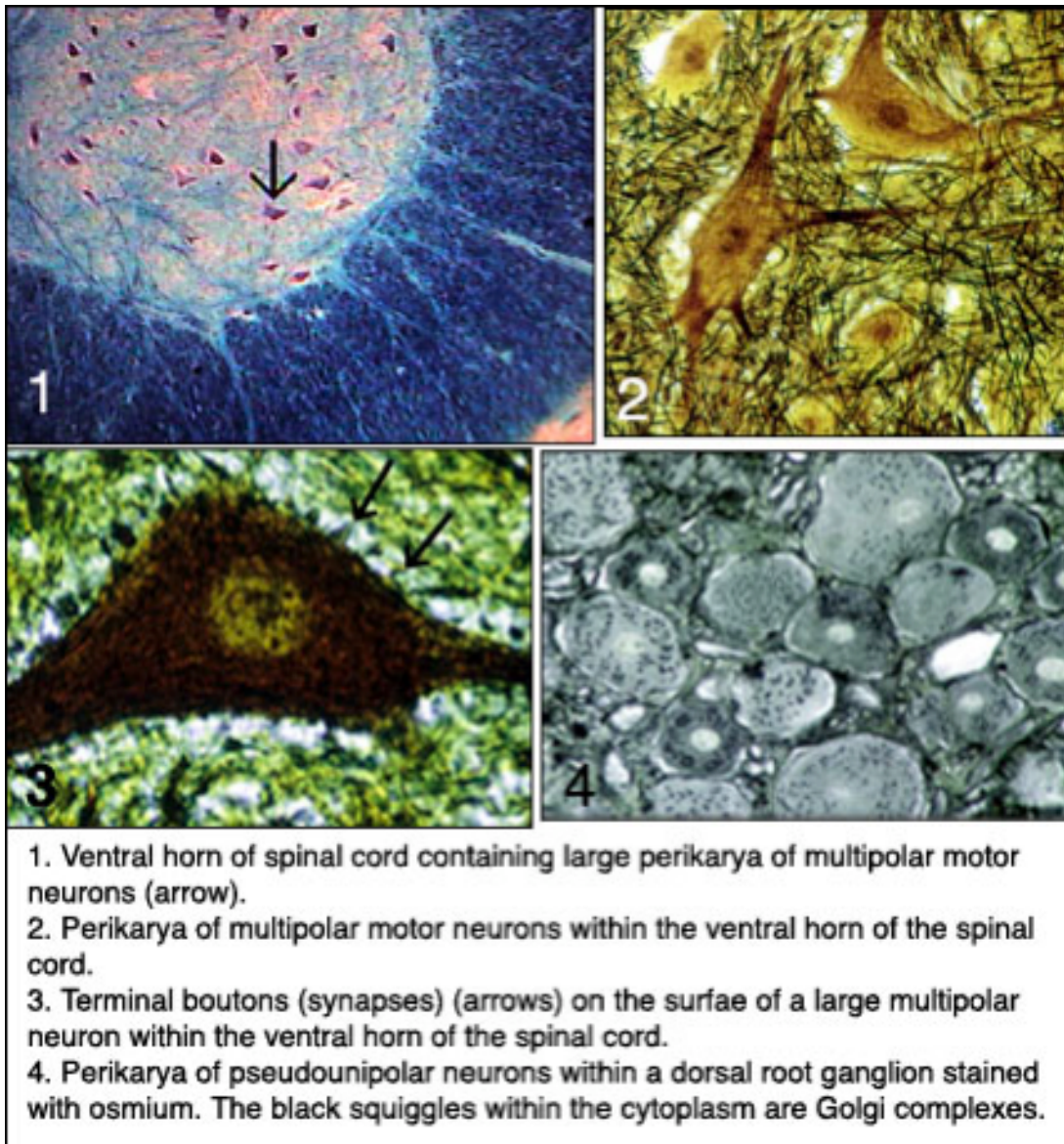


Spinal Cord



The spinal cord is subdivided into a central H-shaped region of gray matter and a surrounding layer of white matter. Gray matter consists mainly of perikarya of neurons, their dendrites, and surrounding neuroglial cells and is arranged into two dorsal and two ventral horns. The dorsal horns contain perikarya of multipolar neurons receiving sensory impulses that enter the spinal cord from the peripheral nervous system. Neurons of the dorsal horns transmit the impulses to other neurons and in this and other areas of gray matter are referred to as internuncial neurons. The multipolar neurons in the ventral horns are the largest in the spinal cord and transmit motor impulses from the spinal cord to the periphery. In the thoracic and upper lumbar regions of the spinal cord, small multipolar neurons form an intermediolateral horn that provides preganglionic sympathetic fibers for the autonomic nervous system. The central canal of the spinal cord lies in the center of the crossbar of the H-shaped gray matter and is lined by ependyma. The white matter consists mainly of myelinated axons and lacks the perikarya and dendrites of neurons. It is subdivided into anterior, lateral, and posterior funiculi by the dorsal and ventral horns of the gray matter. A funiculus consists of several tracts, each of which in

turn contains several bundles of nerve fibers. Nerve fibers in each tract carry similar impulses, motor or sensory, that either ascend or descend along the long axis of the spinal cord.

©William J. Krause