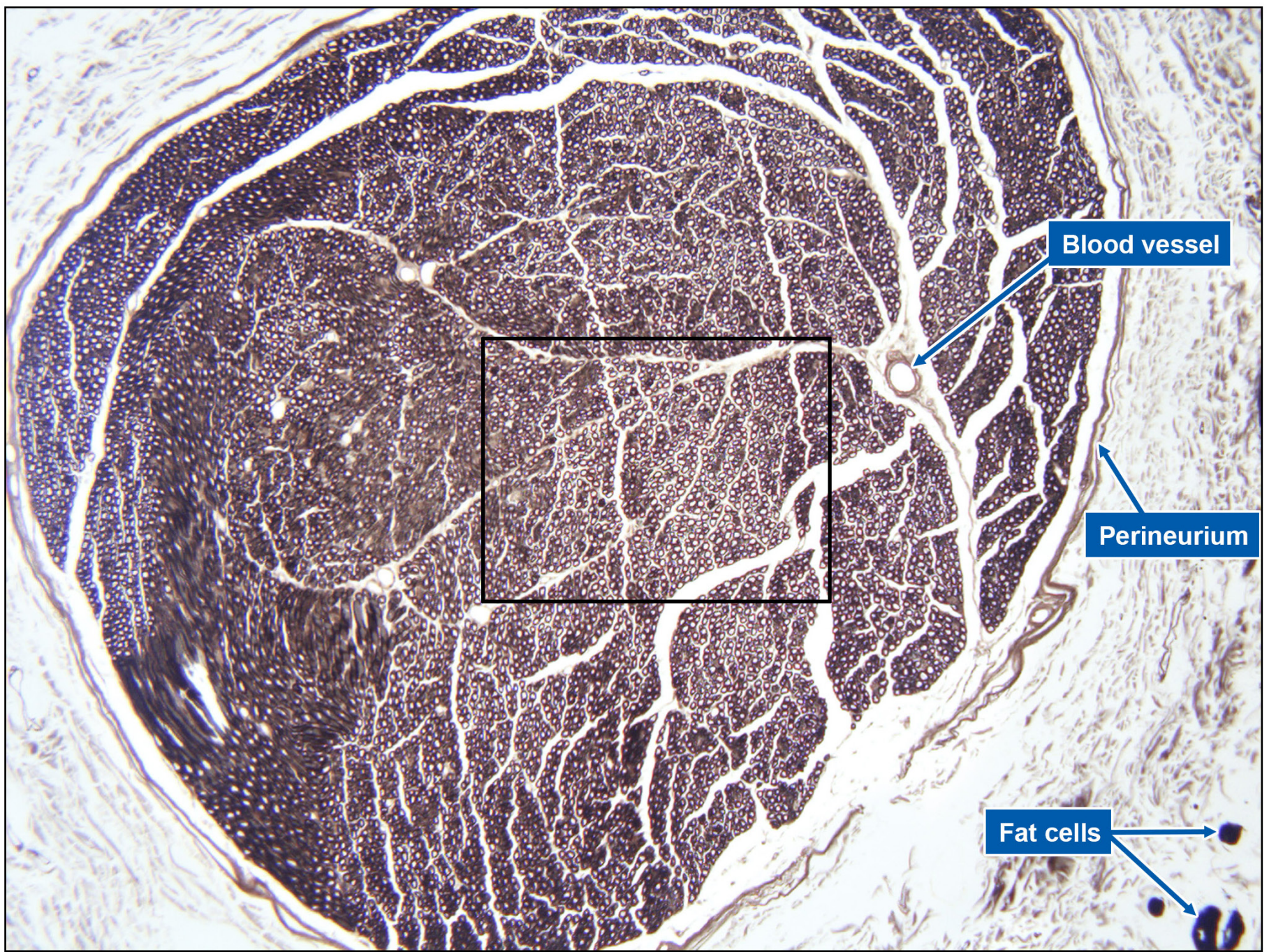


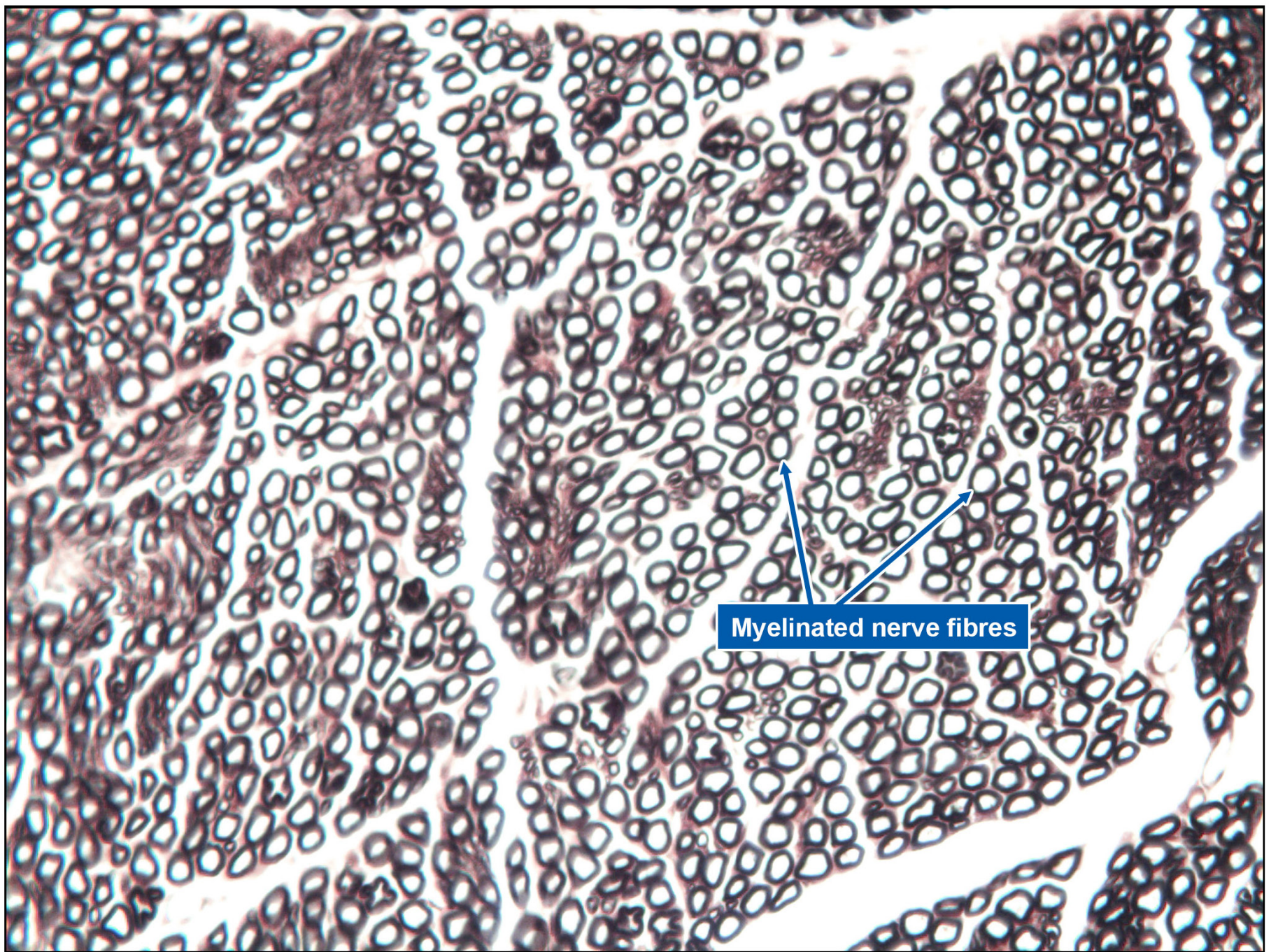
SCIATIC NERVE

Nervous System

Silver staining of sciatic nerve, largest (1cm wide) nerve in the body. Peripheral nerve contains fascicles of nerve fibres consisting of axons.



Low magnification



High magnification

- **Perineurium:** Fascicle of nerve fibres is enclosed by concentric layers of flattened cells that form a dense sheath called the perineurium.
- **Myelinated nerve fibres:** Are ensheathed by myelin.
- Myelin sheath is a greatly extended and modified plasma membrane of Schwann cells wrapped around the length of nerve axons.
- Myelin sheath acts as an electrical insulator and facilitates conduction of impulses along axons.
- **Anterograde Transport:** From soma (body) to terminal part of axon (distal). Supplies distal axon with synthesized proteins and lipids, including synaptic components required for presynaptic activity.
- **Retrograde Transport:** From periphery (terminal part of axon) to the soma (nerve cell body).
- Roles include maintaining homeostasis, degrading, and recycling of worn-out components, neurotrophic and injury response signalling.
- Axonal transport is supported by various molecular motors such as kinesins and dynein, and a complex microtubule network.
- **Rabies Virus** binds to acetylcholine (Ach) receptors of the peripheral nerves at the site of bite by a rabid dog. The virus follows retrograde transport. It moves along the axonal microtubules using motor protein dynein. The virus spreads to the CNS causes a condition called Rabies.