glionic sympathetic fibers which leave the spinal cord with the anterior roots of the upper thoracic nerves. These fibers pass to the sympathetic trunk through the white rami communicantes and terminate in the superior cervical ganglion. Postganglionic fibers from the superior cervical ganglion pass through the internal carotid nerve and the ophthalmic division of the trigeminal nerve to the orbit where the long ciliary nerves conduct the impulses to the eyeball and the dilator pupillæ muscle. The cell bodies of these preganglionic fibers are connected with fibers which descend from the mid-brain.

Other postganglionic fibers from the superior cervical ganglion are distributed as secretory fibers to the salivary glands, the lacrimal glands and to the small glands of the mucous membrane of the nose, mouth and pharynx.

The thoracic sympathetics supply accelerator nerves to the heart. They are supposed to emerge from the spinal cord in the anterior roots of the upper four or five thoracic nerves and pass with the white rami to the first thoracic ganglion, here some terminate, others pass in the ansa subclavia to the inferior cervical ganglion. The postganglionic fibers pass from these ganglia partly through the ansa subclavia to the heart, on their way they intermingle with sympathetic fibers from the vagus to form the cardiac plexus.

Inhibitory fibers to the smooth musculature of the stomach, the small intestine and most of the large intestine are supposed to emerge in the anterior roots of the lower thoracic and upper lumbar nerves. These fibers pass through the white rami and sympathetic trunk and are conveyed by the splanchnic nerves to the prevertebral plexus where they terminate in the collateral ganglia. From the celiac and superior mesenteric ganglia postganglionic fibers (inhibitory) are distributed to the stomach, the small intestine and most of the large intestine. Inhibitory fibers to the descending colon, the rectum and Internal sphincter ani are probably postganglionic fibers from the inferior mesenteric ganglion.

The thoracolumbar sympathetics are characterized by the presence of numerous ganglia which may be divided into two groups, **central** and **collateral.**

The **central ganglia** are arranged in two vertical rows, one on either side of the middle line, situated partly in front and partly at the sides of the vertebral column. Each ganglion is joined by intervening nervous cords to adjacent ganglia so that two chains, the **sympathetic trunks**, are formed. The **collateral ganglia** are found in connection with three great **prevertebral plexuses**, placed within the thorax, abdomen, and pelvis respectively.

The **sympathetic trunks** (*truncus sympathicus; gangliated cord*) extend from the base of the skull to the coccyx. The cephalic end of each is continued upward through the carotid canal into the skull, and forms a plexus on the internal carotid artery; the caudal ends of the trunks converge and end in a single ganglion, the **ganglion impar**, placed in front of the coccyx. The ganglia of each trunk are distinguished as **cervical, thoracic, lumbar,** and **sacral** and, except in the neck, they closely correspond in number to the vertebræ. They are arranged thus:

| | |
|---|---|
| Cervical portion . . . . . | 3 ganglia |
| Thoracic " . . . . . | 12 " |
| Lumbar " . . . . . | 4 " |
| Sacral " . . . . . | 4 or 5 " |

**In the neck** the ganglia lie in front of the transverse processes of the vertebræ; **in the thoracic region** in front of the heads of the ribs; **in the lumbar region** on the sides of the vertebral bodies; and **in the sacral region** in front of the sacrum.

**Connections with the Spinal Nerves.**—Communications are established between the sympathetic and spinal nerves through what are known as the **gray** and **white rami communicantes** (Fig. 799); the gray rami convey sympathetic fibers into the spinal nerves and the white rami transmit spinal fibers into the sympathetic.