conscious recognition of impulses. The descending fibers in the spinal tract of the trigeminal terminating in the nucleus of the tract probably establish relations through connecting neurons with motor nuclei in the anterior column of the spinal cord and with motor nuclei of the medulla.

(2) The **sympathetic afferent fibers** are usually described as terminating in the dorsal nucleus of the vagus and glossopharyngeal. Some authors, however, believe they join the tractus solitarius and terminate in its nucleus. These afferent fibers convey impulses from the heart, the pancreas, and probably from the stomach, esophagus and respiratory tract. Their terminals in the dorsal nucleus come into relation with neurons whose axons probably descend into the spinal cord, conveying impulses to the motor nuclei supplying fibers to the muscles of respiration, *i. e.*, the phrenic nerve and the nerves to the intercostal and levatores costarum muscles. Other axons probably convey vasomotor impulses to certain sympathetic efferent neurons throughout the spinal cord. The dorsal nucleus (nucleus of the ala cinerea) and the posterior continuation of it into the commissural nucleus of the ala cinerea constitute probably the so-called respiratory and vaso-motor center of the medulla. The shorter reflex neurons of the dorsal nucleus probably effect connections either directly or indirectly with motor cells of the vagus itself and other cranial nerves.

(3) **Taste fibers** conducting impulses from the epiglottis and larynx are supposed to pass in the vagus and to join the tractus solitarius, finally terminating in the nucleus of the tractus solitarius. It is not certain that this nucleus represents the primary terminal center for taste and some authors maintain that the taste fibers terminate in the dorsal nucleus. The secondary ascending pathways from the primary gustatory nucleus to the cortex as well as the location of the cortical center for taste are unknown. A gustatory center has been described near the anterior end of the temporal lobe. The nucleus of the tractus solitarius is connected with motor centers of the pons, medulla and spinal cord for the reactions of mastication and swallowing.

(4) **Somatic motor fibers** to the cross striated muscles of the pharynx and larynx arise in the nucleus ambiguus. This nucleus undoubtedly receives either directly or indirectly collaterals or terminals from the opposite pyramidal tract controlling the voluntary movements of the pharynx and larynx. The reflex pathways conveying impulses from the terminal sensory nuclei are unknown, but probably form part of the intricate maze of fibers constituting the reticular formation.

(5) **Sympathetic efferent fibers** arise from cells in the dorsal nucleus (nucleus of the ala cinerea). These are preganglionic fibers of the sympathetic system and all terminate in sympathetic ganglia from which postganglionic fibers are distributed to various organs, *i. e.*, motor fibers to the esophagus, stomach, small intestine, gall-bladder, and to the lungs; inhibitory fibers to the heart; secretory fibers to the stomach and pancreas. The dorsal nucleus not only receives terminals of sympathetic afferent fibers for reflexes but undoubtedly receives terminals and collaterals from many other sources, but the exact pathways are at present unknown.

The **Glossopharyngeal Nerve** (*IX cranial*) is similar to the vagus nerve as regards its central connections and is usually described with it. It contains somatic sensory, sympathetic afferent, taste, somatic motor and sympathetic efferent fibers. The afferent sensory fibers arise from cells in the superior ganglion and in the petrosal ganglion. The same uncertainty exists concerning the nuclei of termination and nuclei of origin of the various components as for the vagus.

(1) The **somatic sensory fibers** are few in number. Some are distributed with the auricular branch of the vagus to the external ear; others probably pass to the pharynx and fauces. They are supposed to join the spinal tract of the trigeminal and terminate in its nucleus. The connections are similar to those of the somatic sensory fibers of the vagus.