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Summary for M.Sc. thesis

Detailed anatomical studies on the cranial nerves of the bird

*Merops Albicolis*

- The n. olfactorius arises as numerous fibres from the olfactory epithelium, which leave the cavity of the nasal capsule through the fenestra olfactoria advehens as a common nerve.
- The n. oculomotorius, after piercing the pia matter, becomes embedded in a shallow groove. The r. superior innervates the rectus superior muscle. The r. inferior gives off the radix ciliaris brevis that enter the ciliary ganglion. The remainder of r. inferior innervates the rectus inferior, the rectus medialis and the obliquus inferior muscles.
- The ciliary ganglion is oval in shape and, in addition to the radix ciliaris brevis, it is connected to the r. profundus of the n. trigeminus through the radix ciliaris longa. One ciliary nerve originates from this ganglion.
- There is an anastomosis between the n. trochlearis and the ramus profundus of the trigeminus.
- The n. trigeminus arises by a single root, which divides into a dorso-lateral division and a ventro-lateral one. The first division enters the Gasserian ganglion.
- There is a connection between the r. profundus of the n. trigeminus and the r. sphenopalatinus. The r. profundus divides into two rami outside the nasal cavity.
- The r. maxillaris of the n. trigeminus joins the lateral sympathetic ramus and there is an anastomosis between the infraorbital nerve and the r. palatinus of the n. facialis.
- The r. mandibularis of the n. trigeminus receives a branch from the lateral sympathetic ramus and it carries motor fibers, which innervate the adductor mandibulae muscles and the intermandibularis muscle.
- The r. manibularis innervates also, the pseudotemporalis superficialis muscle and the pseudotemporalis profundus muscle.

- The r. mandibularis gives off two sensory nerves; the r. anguli oris to the angle of the mouth and the r. cutaneous externus to the skin outer to the mandibular region.
- The n. abducens originates by a single root and innervates the rectus externus, quadratus and pyramidalis muscles.
- The n. facialis originates by a single root and enters the geniculate ganglion from which arise the r. palatinus and hyomandibularis. The r. palatinus joins the r. sphenopalatinus and form together the n. vidianus after which the two rami separate again.
- There is a connection between the r. hyomandibularis and the lateral sympathetic ramus. The r. hyoideus innervates the muscles, outer and inner depressor mandibulae and the constrictor coli muscles.
- The root of the n. octavus divides into a vestibular root and a cochlear one, and innervates all the internal ear structures.
- The n. glossopharyngeus originates by a single root and carries the ganglion superius. The nerve is in close relation the ganglion cervicale supernum.
- The n. glossopharyngeus enters the petrosal ganglion from which arise the rr., lingualis and pharyngeus.
- The jugular ganglion of the n. vagus is in connection with the ganglion superius of the n. glossopharyngeus.
- The n. vagus fuses with the n. hypoglossus for a short distance, during which large number of fibers are transmittes from the former nerve to the latter.
- The laryngeal muscles are innervates by branches from the n. glossophryngeus and the n. hypoglossus.
- The cervical sympathetic trunk enters the ganglion cervicale supernum from which arise the rr., lateral sympathetic and sphenopalatinus.