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Atlas and tables of peripheral nervous system anatomy

Ken W. S. Ashwell and Anne M. Musser

Summary

This chapter provides an illustrative and tabular summary of the innervation of the skeletal musculature of the head, neck, limbs and trunk in the monotremes. The original data that have been brought together for this chapter are scattered throughout the literature, much of it in very old publications that are difficult to access. It is hoped that the compilation of this information in a single chapter will facilitate further studies in this area.

Innervation of the musculature of the head and neck

Cranial nerves 3, 4, 5, 6, 7, 9, 10, 11 and 12 (Fig. 15.1) all supply skeletal muscle in the head and neck. These muscle groups (see Table 15.1) include extraocular muscles for control of eye movement (oculomotor nerve – 3n), masticatory (chewing) muscles (from the

first pharyngeal arch and supplied by the trigeminal nerve – 5n), facial muscles (from the second pharyngeal arch and supplied by the facial nerve – 7n), palatine and laryngeal muscles (from arches 3 to 6 and supplied by the glossopharyngeal and vagal nerves – 9n and 10n), somatic neck muscles (from paraxial mesoderm and supplied by the spinal accessory – 11n, and cervical plexus) and tongue muscles (from occipital somites and supplied by the hypoglossal nerve – 12n).

The main groups of muscles of the head and neck of the monotremes (Figs. 15.2, 15.3) are broadly similar to those in therians, but with some notable exceptions for specific muscles (Diogo *et al.* 2008). These include the apparent absence of one deep facial muscle (digastricus posterior) and some of the smaller superficial facial muscles of therians (occipitalis, auricularis posterior, zygomaticus major and minor, levator anguli oris facialis); as well as the absence of some