

Atlas of the adult and developing brain of the platypus (*Ornithorhynchus anatinus*)

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Introduction

The platypus (*Ornithorhynchus anatinus*) has a natural distribution in the freshwater rivers and lakes down the eastern coast of Australia, in Tasmania and King Island in Bass Strait (see Chapter 2). Individuals have occasionally been recorded in the lower Murray River from western New South Wales into South Australia. Some platypuses have also been introduced to the western end of Kangaroo Island in South Australia and even Western Australia, although it is unknown whether these latter have survived to the present day (Grant 2007).

Adult platypuses are smaller than most people expect, weighing less than the domestic cat (Grant 2007). Large males can reach 60 cm dorsal contour length (bill tip to tail tip), but most are 40–50 cm in greatest length. Males are distinctly larger than females by a factor of 1.4–1.9 and there is, in general, a

latitudinal variation in body weight, such that males from Tasmania may reach 3 kg, whereas average male weight from north Queensland is around 1 kg.

The cerebral cortex of the adult platypus is quite thick but smooth (lissencephalic), in contrast to the gyrified cerebral cortex of the echidna.

Materials and methods

Adult animal acquisition and ethical issues

The procedures outlined below conform to the guidelines established by the National Health and Medical Research Council of Australia. The platypus depicted in the following atlas was a juvenile female (291 g), which had been brought injured to the native animal veterinary clinic at Taronga Zoological Park, Sydney, and died during the course of treatment (Ashwell *et al.* 2006b).