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The percentage of water in the brain of the dog-fish.By **G. G. SCOTT.**

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Donaldson ('10) has shown that in the albino rat between birth and maturity the percentage of water in the brain diminishes from 87.8 per cent. to 77.5 per cent. He calls attention to the fact that the human brain at birth contains a greater percentage of water than at maturity and from the investigations of Koch and Weisbach he obtains as the percentage of water in the human encephalon to be: Birth 88.3 per cent.; 2 yrs. 81.1 per cent.; 5 yrs. 79.2 per cent.; 25 yrs. 77.0 per cent. He concludes that probably in all mammals we will find the same range in percentage of water, that the loss in water occurs in the same manner but that the time required for each successive step is determined by the intensity of the growth process characteristic of each period. The present writer determined the percentage of water of the brains of 17 spiny dog-fish (*Squalus acanthias*) and 97 smooth dog-fish (*Mustelus canis*). The smooth dog-fish ranged in size from very small to large. There is no such reduction in the percentage of water as found by Donaldson and others in the case of the mammalian brain. The average percentage of water in all the *Mustelus* brains examined was 78.5 per cent. There was very little difference between this and that obtained for the very young or the old. There is an indication of a slight fall of about 2-3 per cent. between birth and maturity. The great reduction (*i. e.*, about 7 per cent.) occurs in mammals during the period when the central nervous system is growing most rapidly. Both the rat and man during this short post-birth period pass from a helpless state to one of activity. The rat is born helpless and blind, etc. The dog-fish is an active free-swimming organism at birth. The present writer would conclude then that the differences in reduction of water in the two cases is that the nervous (and body) changes which occur in the mammal are post-embryonic and extra-utero. In the dog-fish they take place in utero. Determinations from brains of late embryonic stages can only settle this hypothesis.