X. THE CHOLESTEROL OF THE BRAIN. III. NOTE ON THE CHOLESTEROL CONTENTS OF HUMAN AND ANIMAL BRAIN.

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The data as to the percentage of cholesterol in brain available in the literature are still rather scanty, and most of the estimations carried out before the introduction of a trustworthy quantitative method can only be considered as approximate. Since Windaus' work has made it possible, by the use of digitonin, to obtain more accurate figures, some estimations of the cholesterol percentage in brain have been published. These were, however, mostly made incidentally with other work, and, moreover, they have been usually expressed in percentages of the moist organ or its chloroform extract. As the amount of water in brain is variable it is impossible, in the absence of any water estimations, to reduce the available figures accurately to a uniform standard.

The following estimations were made by a combination of O. Rosenheim's [1906] method for the preparation of cholesterol with Windaus' [1910] method for its quantitative estimation. The method, which obviates the difficulties due to contamination with other brain lipoids, has been published in full in the preceding paper [1914]. In some cases search was made for the presence of cholesterol esters with negative results.

Unfortunately this somewhat tedious work had been finished before the results of my previous communication [1914] on the occurrence of "oxycholesterol" in brain were obtained. In the light of the latter work, the figures must be taken to express the sum of the quantities of cholesterol and "oxycholesterol" present. Except in the case of human brain, "oxycholesterol" was not tested for.

Description of brain	Water percentage	Cholesterol percentage	
		in moist brain	in dry brain
Man (i)	78·86	1·93 } 1·97 }	1·95 9·22
Man (ii)	78·90	1·91 } 1·92 }	1·91 9·01
Child (aged 3 months)...	85·80	0·66 } 0·73 }	0·69 4·89
Child (♂ aged 5 days) ...	89·99	0·53 } 0·53 }	0·53 5·29
Foetus (♀ aged 36 weeks)	90·29	0·39 } 0·40 }	0·39 4·07
Dog... ..	76·18	2·73 } 2·79 }	2·76 11·59
Cat	76·53	2·29 } 2·41 }	2·35 9·99
Ox (i)	78·83	2·39	11·28
Ox (ii)	78·32	2·57 } 2·65 }	2·61 12·04
Sheep	79·50	2·13	10·37
Rabbit (i)	77·86	2·12	9·57
Rabbit (ii)	79·15	1·90	9·11
Fowl	80·34	1·43 } 1·48 }	1·45 7·40
Codfish (i)	84·03	1·92	12·02
Codfish (ii)	84·94	1·79	11·89

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REFERENCES.

- Rosenheim, M. C. (1914), *Biochem. J.* **8**, 74.
 Rosenheim, O. (1906), *J. Physiol.* **34**, 104.
 Windaus, A. (1910), *Zeitsch. physiol. Chem.* **65**, 110.