When the amount of sugar that is absorbed is plotted against time, a straight line is obtained, as is illustrated in Figure 1. The maximum deviation from the mean was ±10 per cent, which is as close an agreement as can be expected from a biological method such as the one used for this work. The straight lines in Figure 1 extend to a point where about 50 to 70 per cent of the sugar originally introduced has been absorbed. From this it follows that the rate of absorption remains constant in spite of the diminution of the amount and also the concentration of sugar present in the intestine; or that the rate of absorption is independent of both factors.

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Quantitative studies on the pars tuberalis of the hypophysis cerebri.

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The *pars tuberalis* has been shown to be a distinct portion of the epithelial hypophysis both embryologically and histologically.[1, 2] Whether it serves a distinct function, if any, has not been determined.[3]

The method employed has been that utilized by Hammar, Rasmussen[4] and others. The three parts of the epithelial hypophysis were carefully outlined on paper of uniform thickness using serial sections and the projection microscope. The several parts were then cut out with scissors, and weighed. The volume of each part was determined in per cent of the total volume of the entire epithelial hypophysis. Then the value of the *pars tuberalis* in per cent of the *pars intermedia* was calculated.

In seventeen amphibia examined, there is great variation in the relative size of the *pars tuberalis* and the *pars intermedia*. In the

[1] F. Tilney, *Internat. Monatschr. f. Anat. u. Physiol.*, 1913, xxx.

[2] W. J. Atwell, *Am. J. Anat.*, 1918, xxiv, 271.

[3] W. J. Atwell and C. J. Marinus, *Am. J. Physiol.*, 1918, xlvii, 76.

[4] A. T. Rasmussen, *Endocrinology*, 1924, viii, 509.

tailed amphibia the *pars tuberalis* is relatively much larger than it is in the Anura. In *Plethodon gutinosus* and *P. cinereus* it is from one and a half to nearly five times as large as the *pars intermedia.*

In *Rana pipiens,* on the other hand, the *pars tuberalis* is much the smaller. In four frogs examined, the volume of the *pars tuberalis* was only 4¼ per cent of the volume of the *pars intermedia.*

The cat was selected as the mammalian type for this study. In this species the *pars tuberalis* may be distinguished with ease. The relative values for the three lobes is shown in the appended table.

Two important deductions may be drawn from our data: (1) In a number of vertebrate forms the volume of the *pars tuberalis* is equal or nearly equal to that of the *pars intermedia;* (2) As far as volume is concerned the *pars tuberalis* may be capable of producing an important secretion in forms as high as the mammals.

Relative Volume of Lobes of Epithelial Hypophysis.

Mammalia (Felis domes.)	Sex	Weight grams	Volume per cent of total epithelial hypophysis			*Pars tuberalis* in per cent of *pars intermedia*
			Pars anterior proprior.	*Pars intermedia*	*Pars tuberalis*	
Cat 10	Female	1181	79.17	11.67	9.18	78.66
Cat 20	Female	2000	74.83	16.58	8.41	50.72
Cat 16	Male	1880	78.92	12.24	8.85	73.30
Cat 18	Male	2400	71.03	23.24	5.72	24.61