

of pectin can be accompanied by only a slight liberation of free reducing groups^{2,6,7}. One preparation from *B. fulva*, for example, produced a 50 per cent drop in viscosity for a 0.5 per cent hydrolysis of the pectic acid.

The possibility, however, remains that a disaggregating enzyme in addition to pectin-esterase and polygalacturonase may be necessary for the degradation of pectin. It is interesting to speculate whether this hypothetical disaggregating enzyme is related to protopectinase, an enzyme the separate identity of which has never been clearly demonstrated.

Unpublished work on the relationship between the ratio of the reduction in viscosity to the logarithm of the amount of enzyme for pectic enzyme preparations acting on sodium pectate shows that the reaction occurs in two steps, and recalculation of some of the data of Matus⁷ demonstrates a similar effect, which may indicate the successive action of two separate enzymes.

Whether enzymatic disaggregation of pectin can be produced without scission of a small number of glycosidic bonds is under investigation, and will be reported in detail elsewhere as part of a general study of the pectic enzymes of microfungi.

Acknowledgments are made to Miss M. Olliver and Mr. L. D. Galloway for cultures of *Byssochlamys fulva*, to Mr. G. L. Solomons for assistance with some of the experimental work, and to the Directors of H. W. Carter and Co., Ltd., for permission to publish this communication.

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Two Phases of the Water Metabolism in Newly Born Rats

THE water metabolism of newly born mammals differs from that of adult animals. This difference is due to the fact that the former cannot increase their tubular re-absorption of water under conditions of dehydration to the same extent as adult animals¹. The reason for this difference lies in the neurohypophysis of newly born mammals, which is morphologically and functionally immature². I have tried to ascertain whether the water metabolism of newly born rats develops continuously, or whether there is a jump in its development. I have investigated whether

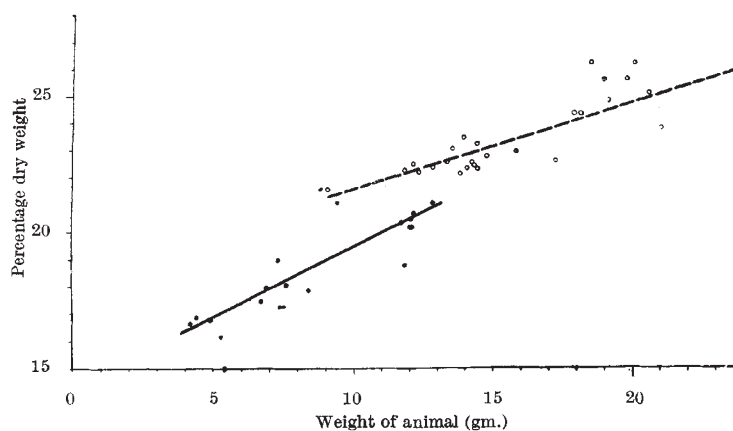


Fig. 1. Percentage dry weight in newly born rats: ●-●-, animals killed before their eyes opened; ○-○-, after their eyes opened

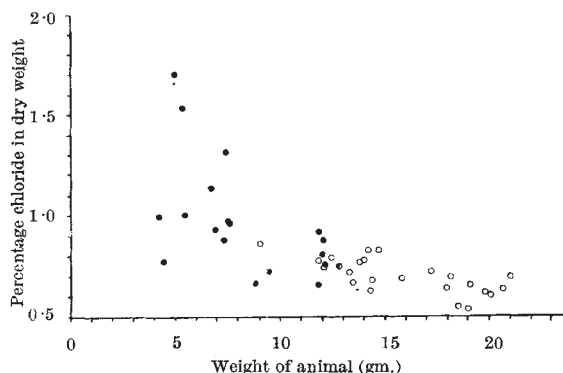


Fig. 2. Chlorides as percentage of dry weight in newly born rats: ●-●-, animals killed before their eyes opened; ○-○-, after their eyes opened

there is a correlation between the functional development of the organ of sight and the quality of the water metabolism.

Forty-seven newly born white rats from eight litters (our own breed) were killed at various ages and the percentage dry weight and the chlorides as a percentage of dry weight were determined. The results are shown in Figs. 1 and 2. It was observed that at the time when the animals' eyes open (that is, when their weight is approximately 12 gm.) the percentage of dry weight increases suddenly by 10 per cent. Regression lines for the increase in dry weight are also shown in Fig. 1. It can be seen that the slope of the line showing increase in dry weight decreases at the time the eyes open from 27° 30' to 17° 40'. Statistically, *p* for the difference of these two angles is approximately 0.05. Fig. 2 shows the percentage of chlorides in the dry weight for the same animals. It can be seen that the level of chlorides falls steadily; at the time the eyes open, however, their variability decreases.

These experiments demonstrate the existence of correlation between the functional development of the organ of sight and the quality of the water metabolism in newly born rats.

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