4.205 mg yielded 2.710 mg	H_2O and 5.830 mg CO_2		
	Found	C = 37.85	H = 7.21
Octa-acetyl trehalose $C_{28}H_{38}O_{19}$	Theoretical	C = 49.54	H = 5.65
3.440 mg yielded 1.695 mg	H_2O and 6.305 mg CO_2		
	Found	C = 49.99	H = 5.51
4.310 mg yielded 2.23 mg	H_2O and 7.83 mg CO_2		
	Found	C = 49.55	H = 5.79

Trehalose may be determined quantitatively in one gm of yeast by adding 10 cc of NH_2SO_4, diluting with water and precipitating with heavy metal. The filtrate obtained does not reduce alkaline copper solution, provided glucose added prior to the extraction of the yeast has been allowed to ferment completely. The filtrate is made normal with H_2SO_4 and hydrolyzed for 8 hours in the water bath. This converts 95 to 98 per cent. of the trehalose present to glucose. After removal of the H_2SO_4 with barium carbonate the glucose content is determined by means of the Shaffer-Hartmann copper reagent.

Fresh baker's yeast contains from 0.5 to 1.5 grams trehalose per 100 grams moist weight, the amount depending on the medium on which the yeast was grown. Aeration of a yeast suspension without added substrate lowers the trehalose content markedly. During fermentation of glucose the trehalose content may increase to 2 to 3 per cent. The biological significance of trehalose in yeast will be dealt with in a later report.

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THE ASCORBIC ACID CONTENT OF CERTAIN ORGANS OF CHICKS RAISED ON VITAMIN C DEFICIENT RATION

THE presence of a high concentration of vitamin C in the livers of chickens fed on a scorbutic diet has been reported by Hart, Steenbock and associates[1] and Carrick and Hauge[2] by biological tests. Recently Ray,[3] using the titrimetric dye method of Birch *et al.*,[4] found that although egg yolk and egg white both were devoid of vitamin C, after 4 days of incubation the embryo began to show the presence of ascorbic acid. The livers of the embryos after 15 to 19 days of incubation were found to contain 0.105 to 0.178 mg of ascorbic acid in the whole liver and after 21 to 24 days 0.226 to 0.273 per liver.

Using the titrimetric dye method, we have recently estimated the vitamin C content of different organs of over 20 chicks, fed on a diet free from vitamin C and with or without ultra-violet irradiation, from experiments on certain vitamin D studies and found that the adrenals, intestine and intestinal mucus as well as the liver all possess a high content of ascorbic acid, whether the chicks received ultra-violet irradiation or not, and further that the concentration of ascorbic acid in these organs did not vary during the growth period between the second and the third month.

Pancreas and kidney both contained a moderate amount of vitamin C, being about one third of that of the liver or intestine. The muscle was devoid of ascorbic acid. Both the intestinal contents of the small and of the large intestine possessed a trace of ascorbic acid, indicating that part of the ascorbic acid was excreted through the intestinal wall to the lumen.

Table I shows the average result obtained with the two groups.

TABLE I
ASCORBIC ACID CONTENT mg PER gm OF TISSUE

Ultra-violet irradiation	Muscle	Adrenals	Liver	Intestine	Intestinal mucus	Small intestinal content	Large intestinal content	Pancreas	Kidney
Yes	0	0.811	0.335	0.380	0.375	0.052	0.045	0.128	.100
No	0	0.915	0.302	0.391	0.404	0.047	0.056	0.134	.120

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SCIENTIFIC APPARATUS AND LABORATORY METHODS

APPARATUS FOR THE STUDY OF SENSORY DISCRIMINATION IN MAMMALS

IN the investigation of the functional characteristics of the receptors and nervous system of animals the need for methods permitting the elicitation and objective recording of responses to external stimulation is recognized. The present paper describes such a method, which has been found to be well suited to the analysis of all phases of the visually controlled behavior of the cat, and which may be modified for the investigation of the responses to other forms of exteroceptive stimulation in various typical laboratory mam-

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