

during which the same diet was fed in an unpalatable condition and in dirty and unpleasant surroundings. The food was rendered unpalatable and unappetizing by the following treatment. All the food ordinarily used for each meal (meat, biscuits, jelly, corn-starch pudding, oleomargarine, etc.) was stirred together in a large, flat porcelain dish. The dish itself was smeared with animal charcoal, as was the beaker used as a drinking glass. The table was dirty and strewn with dirty dishes. A little indol was sprinkled about under the table. The subjects were kept in ignorance of the constituents of the unpalatable mixture. The food was so unpalatable that one subject vomited his first meal shortly after he had eaten it.

The following table shows the findings on the other subject.

Period.	No. of Days.	Nitrogen.							Percentage Utilization.
		Ingested.		Excreted.			Balance.		
		Daily, Grams.	Period, Grams.	Urine, Grams.	Feces, Grams.	Total, Grams.	Period, Grams.	Daily, Grams.	
Palatable.....	7	10.75	75.25	62.95	10.06	73.01	+2.24	+0.32	86.7
Unpalatable....	2	10.75	21.50	17.03	3.09	20.12	+1.38	+0.69	85.7

The differences in utilization of the palatable and unpalatable foods were quite small as were the variations in nitrogen retention. This short test indicates that flavor is not the outstanding dietetic asset that some people would have us believe.

59 (1519)

Amino-acid synthesis in the organism of the white rat.

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It is generally conceded that the organism of the white rat must be supplied with an adequate amount of lysine if normal growth is to result. The purpose of the present series of experiments was to determine whether α -aminocaproic acid (norleucine), which has been shown to be present in the proteins of the central

nervous system, could replace lysine in the diet. No evidence exists that in the young rat aminization of fatty acids with the resulting formation of aminoacids takes place. It was considered that it might be possible to introduce a second amino group into the caproic acid molecule provided one amino group was already present in the α position. In view of the current idea as to the probable position of the ϵ amino group of lysine in the protein molecule, the possibility also suggested itself that synthesis of a protein without the free amino group of lysine might occur by substitution of norleucine for lysine in the molecule.

Young white rats were fed diets containing 18 per cent. gliadin (wheat), lard, purified butter fat, starch, and protein-free milk. Maintenance or slow growth was observed. That this failure of normal growth was due to protein deficiency was demonstrated by normal growth of young rats on a similar diet in which casein replaced gliadin. Substitution of 0.5 and 1.5 per cents. of norleucine for equivalent amounts of gliadin did not alter the rate of growth. Normal growth occurred, however, when 1 per cent. lysine replaced an equivalent amount of gliadin or was substituted for the norleucine. These results are in agreement with those of Osborne and Mendel in demonstrating the efficiency of lysine as a supplement to a gliadin diet. The experiments with norleucine offer no evidence that this amino acid can replace lysine in nutrition.

60 (1520)

A pharmacodynamic analysis of Straub's morphine reaction.

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In 1911 Straub and later his pupil Herrmann described a biological reaction for morphine which they thought was specific for that alkaloid and could possibly be used in forensic work.^{1, 2} They noted that after injections of small amounts of morphine in mice there followed a peculiar stiffening and bending backwards

¹ Straub, *Deutsche med. Wochst.*, 1911, 1426.

² Herrmann, *Biochem. Zeitschr.*, 1912, XXXIX, 216.