crystalline pepsin. This seems to indicate that during activation some part of the pepsinogen molecule is split off, thus transforming it into pepsin.

How this cleavage is performed, however, remains for the time being unexplained. It will be noted that the activation rate is practically constant throughout the whole reaction, in agreement with the results of Ege and Menck-Thygesen.[2] This is difficult to explain and we do not feel prepared for any discussion of the mechanism of the activation until further experimental evidence has been obtained. We should like to mention, however, that there is some slight evidence in favor of the assumption that the cleavage might be a proteolytic reaction (slow activation after infection with bacteria, *Cf.* Ege and Lundsteen,[5] Kleiner and Tauber[3]—we have had similar experiences), and we have tried, therefore, to activate pepsinogen by trypsin and papain. These attempts have been unsuccessful.

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Avitaminosis. XVII. Influence of High Fat-Containing Diets on Vitamin B_1 Requirements.*

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In a previous investigation[1] it was demonstrated that as much as 30% of fat in the diet has no sparing action on vitamin B requirements for lactation of the rat. In this study the problem has been extended to the non-lactating rat.

The following series of experiments were planned with the objective of increasing the protein as well as the fat content of the ration, at the same time keeping constant a high vitamin G content by the introduction of 15% of dehydrated autoclaved beef. The beef, purchased as round steak, was freed from all visible fat and bones and after autoclaving and drying at 100°C., contained 83% crude protein. The composition of the rations is given in Table I. It will be noted that the protein content varied from 19.98% to 33.37%, and the fat content ranged from 0 to 50%. That all the rations had a high vitamin G content became apparent after excellent growth

[5] Ege, R., and Lundsteen, E., *Biochem. Z.*, 1934, **268**, 164.

*Research paper No. 380, Journal Series, University of Arkansas, Fayetteville.

[1] Sure, B., PROC. SOC. EXP. BIOL. AND MED., 1933, **30**, 622.

was secured by the daily supplementation of a vitamin B concentrate, which was a Fuller's earth adsorbate kindly furnished by Dr. Jansen of Holland. Food consumption records showed that there was a daily intake of 500 to 600 mg. of autoclaved beef, which should have assured an abundant intake of vitamin G.

The results of 5 groups of animals on the dietary regime outlined in Table I disclosed that neither increasing the fat nor the protein in the ration, containing an abundance of vitamin G, is followed by any noteworthy sparing action on vitamin B_1 requirements of the non-lactating albino rat.

TABLE I.
Composition of Rations.

	A	B	C	D
Casein†	9	12	19	25
Salts No. 185	4	4	4	4
Autoclaved Beef	15	15	15	15
Lard	0	10	30	50
Dextrin	72	59	32	6
Protein Content ($N \times 6.25$)	19.98	22.27	28.35	33.37

† Purified according to method described in PROC. SOC. EXP. BIOL. AND MED., 1933, **30**, 779.

Our next efforts were to determine if administering sub-optimum daily allowances of vitamin B_1, additional increment of growth would become apparent on rations containing greater proportions of protein and fat. Numerous experiments, the rations of which were supplemented with increasing amounts of dehydrated baker's yeast, Sure's vitamin B concentrate, and Jansen's Fuller's earth adsorbate, showed negative data.

From the character of our results, therefore, we conclude that, under the dietary regime we employed, high fat diets have no sparing action on vitamin B_1 requirements, even in the presence of an abundance of protein and vitamin G.

Our findings are in accord with the general conclusions in this field of study with the recent results of Steenbock and Kemmerer[2] but do not concur with the recent results of Evans and Lepkowsky.[3]

2 Steenbock, H., and Kemmerer, A. R., Bulletin 428, Wis. Exp. Sta. Report, 27.

3 Evans, H. M., and Lepkowsky, S., *J. Biol. Chem.*, 1934, **107**, 429.