

important to studies of bacterial growth and metabolism, but beyond this, there is at present, no other way by which the numerical values of the fundamental growth constants, λ , ρ , and κ can be determined, and consequently, no other means of approach to a further study of their ultimate physical and physiological properties.

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Influence of Raw and Whole Dried Liver on Food Consumption and Utilization.*

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In experiments described by Smith¹ it was shown that liver tissue extracted with alcohol until fat-free has a biological value inferior to that of whole liver, as shown by a subnormal growth rate. In the present experiments an attempt was made to gain information as to the manner in which whole liver exerts its favorable influence. A combination of the efficiency quotient method of Palmer and Kennedy² and the paired-feeding method used by Mitchell and Carman³ was used. Male albino rats on a complete diet containing 20% extracted liver,¹ supplemented by 0.5 gm. of dried whole liver or 1.5 gm. of raw liver daily, and whose food intake was limited to that of control animals, grew at a faster rate and had lower efficiency quotients than did the controls. Animals receiving the supplements

TABLE I.

Exp. No.	Liver Supplement	Prelim. Period 21 days		Exp. Period 40 days			Remarks	
		Food	E.Q.	Wt. Start	Gain Wt.	E.Q.		Food
1	—	gm. 126	4.66	gm. 74	gm. 100	2.53	314	Control
	Whole	105	4.42	73	115	2.10	314	Limited
	"	118	4.63	80	146	1.82	416	Unrestricted
2	—	171	4.38	101	123	2.25	449	Control
	Ext'd	111	4.33	76	120	2.69	439	Limited
	"	120	4.33	88	139	2.10	459	Unrestricted

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¹Smith, H. G., PROC. SOC. EXP. BIOL. AND MED., 1931, **28**, 597; 1932, **29**, 669.

²Palmer, L. S., and Kennedy, C., *J. Biol. Chem.*, 1931, **90**, 545.

³Mitchell, H. H., and Carman, C. G., *J. Biol. Chem.*, 1926, **68**, 165.

and having no restrictions in food intake consumed more food, but made greater gains and had somewhat lower efficiency quotients than those whose food intake was limited. When the diet was supplemented with an equivalent amount of alcohol-extracted liver (0.5 gm.), the animals with limited and with unrestricted food consumption made no greater, or but slightly greater, gains than did the control animals and also had similar efficiency quotients. In all, 8 experiments (24 animals) with the whole liver and 4 (12 animals) with the extracted-liver supplements were carried out. A typical experiment with each of the supplements is shown in Table I.

It appears, therefore, that the increased growth rate resulting from feeding whole liver is due to some influence other than an increased food consumption, and that the factor responsible for the growth-promoting effect is removed by alcohol.

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Respiratory Quotient of Various Parts of the Brain

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The respiratory quotients of minced brain stem, cerebellum and medulla of fed rats were studied in the Warburg apparatus. The tissues were suspended in Ringer solution containing 0.1% glucose and buffered with phosphate at pH 7.4. The results are presented in Table I.

Further work is in progress in an attempt to determine the ability of the brain to oxidize various food stuffs.

TABLE I.

Part	No. Observations	Average RQ	Deviation of Mean
Cortex	8	0.99	±0.001
Brain stem	30	0.93	±0.001
Cerebellum	25	0.89	±0.002
Medulla	25	0.89	±0.002