

maining kidneys of rats after a unilateral nephrectomy. More than 200 animals have been studied and the lesions described have occurred independently of the diets fed.

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Relation of Vitamins B (B₁, F) and G (B₂) to Renal Enlargement in Rats Fed High Concentrations of Protein.*

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That vitamins B and G play a unique and important rôle in the metabolism of proteins is believed by some investigators. Reader and Drummond¹ have stated that there is little hypertrophy of the kidneys of rats fed on diets rich both in protein and in vitamin B complex, and that the required vitamin B complex is quantitatively related to the amount of protein in the diet. As this conclusion was not in accord with certain of our own observations we planned experiments to test the thesis that renal enlargement produced by high protein diets is lessened by increased ingestion of vitamins B, G and the vitamin B complex.

Groups of 12 to 14 animals (30 days old), consisting of intact rats as well as those from which one kidney had been removed, were fed diets of 18 and 90% protein respectively for 56 days. The groups were fed 3 different levels of yeast and in addition the highest level of yeast was supplemented with (1) factor G, using autoclaved yeast or (2) factor B, in the form of tikitiki extract.† Additional experiments are in progress to test the effect of an excess of the heat-stable (vitamin G) and heat-labile (vitamin B) factors fed separately without yeast. At autopsy hearts and kidneys were weighed and renal enlargement calculated on the basis of the weights of these organs as published by Donaldson.²

In the accompanying table are presented experimental data which show that: 1. Renal enlargement occurs in both nephrectomized

* Aided by a grant from the Committee on Scientific Research of the American Medical Association.

¹ Reader, V., and Drummond, J. C., *Biochem. J.*, 1926, xx, 1256.

† Furnished through the kindness of Dr. Brown of the Philippine Bureau of Science.

² Donaldson, H. H., "The Rat," 1924, 2d ed., Philadelphia, Penn.

TABLE I.
*Kidney Enlargement on High Protein Diets Fed with Varying Amounts of
 Vitamins B and G.*

	Protein in diet	Yeast (gm.)				
		0.4	0.8	1.6	1.6+ 3 drops tiki-tiki extract	1.6+ 7% autoclaved yeast
	%	Enlargement (%)				
Nephrectomized rats	18	57	52	64	60	51
	90	115	119	124	127	129
Difference		58	67	60	67	78
Intact rats	18	-7		4		
	90	39		50		
Difference		46		46		

and intact rats fed high protein diets. 2. This enlargement takes place irrespective of the amount of yeast consumed. 3. Supplementing yeast with additional vitamin G or vitamin B does not lessen the enlargement. 4. The consistent enlargement found does not indicate any quantitative relationship between the intake of protein and vitamins B and G in reducing renal hypertrophy as suggested by Reader and Drummond.

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Correlation in Development of Structures Associated with Transplanted Eyes.

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Eyes were transplanted in normal position between embryos (tail-bud stage) of *Amblystoma punctatum* and *A. tigrinum*, forms of contrasting size, and the animals reared until the approach of metamorphosis. The grafted organs retain their specific size on the foreign species, and are hence out of scale with the associated structures of the host. In response, the latter exhibits certain morphological adjustments, particularly in the brain, eye-muscles, and chondrocranium.

When the nerve of the large transplanted *tigrinum* eye makes normal connection with the brain of *punctatum*, the smaller species, there follows a hyperplasia of 10-20% in the gray matter of the