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Effect of Irradiating Non-Goitrogenic Cabbage on its Goitrogenic Activity.

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The effect of irradiation on the goitrogenic activity of cabbage was recently reported by Webster.[1] The cabbage employed by Webster possessed some goitrogenic activity before irradiation.

The experiment here reported were undertaken to see whether prolonged irradiation of a non-goitrogenic variety of cabbage would make it goitrogenic. All the cabbage used was obtained from the same source. It was finely hashed, spread out in layers 1 to 2 cm. thick, and irradiated for 30, 60, or 120 minutes at a distance of 50 cm. with a Cooper-Hewitt mercury vapor lamp, ultra-violet limits 2252-2224 A.U. One week before cabbage feeding was begun the thyroid glands of all animals were examined under ether anesthesia, and each animal was injected subcutaneously with 5 mg. KI to produce uniform involution of the thyroid. The cabbage was fed in

TABLE I.

Group	No.	Body Wt. gm.	Thyroid Wt. mg.	Days on Diet	Av. Thyroid Wt.-mg.	Thyroid Wt./kg. Body Wt.-mg.
A						
Normal	1	2890	261	—		
Diet	2	2285	135	—	201	86
	3	1925	207	—		
B						
Unirra-	1	1860	90	126		
diated	2	1380	80	91	93	75
Cabbage	3	1975	110	126		
C—Cab.	1	2970	205	126		
Irrad.	2	2085	170	126	181	75
30 min.	3	2115	172	126		
D—Cab.	1	2025	135	126		
Irrad.	2	1790	121	28	128	68
60 min.	3	1860	130	126		
E—Cab.	1	1900	120	126		
Irrad.	2	2175	110	126	110	51
120 min.	3	2460	100	126		

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[1] Webster, B., PROC. SOC. EXP. BIOL. AND MED., 1932, **29**, 1070.

quantities equivalent to 60 calories/kg. per day. This constituted the only food for the first 12 weeks. In the last 6 weeks of the experiment 50 gm. of oats were given to each animal once a week. After 18 weeks of cabbage feeding, the animals were killed, and the thyroid glands were weighed.

The results (Table I) indicate that the prolonged feeding of cabbage which is originally not goitrogenic, and is irradiated in the manner described does not produce thyroid enlargement. Non-goitrogenic cabbage, therefore, does not seem to contain the precursors of a goitrogenic substance that can be synthesized by prolonged irradiation under the conditions stated for this experiment.

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Vestibular Function in Experimental Beriberi.

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The neuromuscular manifestations of beriberi (vitamin B_1 deficiency), the so-called "convulsions, spasticity and paralysis", simulate in some respects the disturbances of equilibrium and coordination which follow injury to the labyrinths. It has been suggested that these manifestations are the consequence of a lesion of the vestibular apparatus, but histological examination has failed to substantiate this hypothesis.[1] The investigation here reported was therefore devoted to a functional examination of the vestibular system to gain further information regarding the existence of such a lesion.

Vestibular function was tested by a modification of the well known Barany test. The character and duration of nystagmus following a standardized rotational stimulus served as the index. More than 2,000 tests have been made on 84 rats under various experimental conditions. The basal diet used throughout these experiments, when supplemented with codliver oil and brewer's yeast, permitted normal growth and health. When the whole yeast in the supplement was replaced by autoclaved yeast, however, the neuromuscular manifestations of beriberi appeared in 5 to 7 weeks.

[1] Woollard, H. H., *Australian J. Exp. Biol. and Med. Sci.*, 1932, **9**, 173.