

### Thyroid Hyperplasia Produced in Chickens by Ultraviolet Light Deficiency.

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A group of 4-week old Barred Rock chickens was divided into two lots. Both lots of chickens received the same diet with the addition of cod liver oil from time to time. Both lots were raised indoors. The first lot of chickens which was used as a control received light through ordinary window glass supplemented by ultraviolet radiation twice a week by means of a mercury vapor lamp. The second lot of chickens was raised under No. 48 Pittsburgh amber glass which has been shown to exclude effectively the ultraviolet rays.

About 70 chickens of which half were controls have been used in this experiment. The chickens in both groups were vigorous, well-nourished, and well-developed. There was no essential difference in plumage. There was little or no evidence of parathyroid enlargement. The chief finding in the chickens raised under amber glass was an enlargement of the thyroid glands. This is well shown by Table I which gives the results on the latest group of 31 birds.

TABLE I.

	Age	Avg. body weight	Weight of thyroids in mgm.		
			min.	max.	avg.
8 controls	days	gm.			
	62-109	430	16	34	27
8 ultraviolet deficient	" "	425	28	100	48
7 controls	122-164	1021	34	74	54
8 ultraviolet deficient	" "	1010	40	226	124

In addition to the increase in size of the thyroids of the chickens deprived of ultraviolet light, these glands were of a deep purplish red color as opposed to the light pink of the normal gland. Microscopically the enlarged glands showed evidence of marked epithelial hyperplasia with striking disappearance of colloid.

It would seem from this experiment that ultraviolet light deprivation is a powerful goitrogenic agent in Barred Rock chicks.