This does not agree with the statistics for the human subject nor with Minot's results in the guinea-pig, but, of course, the number of individuals so far examined by me is too small to draw any general conclusion from. The birth mortality is highest in the males, as is also the average body weight when born.

Minot found that in male guinea-pigs, as in newborn children, there is an actual loss of weight for the first 3 or 4 days after birth. Such, however, is not the case in the dog. In almost all the litters there is some gain in 24 hours, and this is very decided at the end of the second day. There is a post-natal retardation of growth but it is of relatively short duration.

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The influence of experimental cretinism upon nitrogenous metabolism in the sheep.

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The object of the investigation was to determine whether athyroidism in sheep is associated with any striking abnormality of intermediary metabolism, such as might be revealed by the nitrogen partition of the urine. The subjects were three sheep which have already been described before this Society by Simpson.[1] At the age of two months they had suffered the loss of the thyroid and internal parathyroid glands, and had subsequently developed into typical cretins. One year after the first operation the external parathyroids also had been removed. While the later condition was of course not that of uncomplicated athyroidism, symptoms referable to the loss of the parathyroids were but slightly marked. Tetany, in particular, was never observed. When the animals came under my care they were one and a half to two years old.

To furnish a basis of comparison two normal sheep, nearly four years of age, were included in the investigation. As the most convenient way of avoiding the difficulties caused by variable appetite, etc., all five animals were starved. The urine was collected as voided.

[1] Simpson, PROC. SOC. FOR EXP. BIOL. AND MEDICINE, 1911, IX, 2.

The normal animals endured fasts of five days' duration with little apparent distress or enfeeblement. Of the others two rapidly weakened, and succumbed within six days; the third was in excellent condition after seven days without food. Below is shown the ascertained distribution of nitrogen in the urine of one normal and one operated animal. The records of the others were of corresponding character.

NORMAL SHEEP—WEIGHT 42 KILOGRAMS.

Day of Starvation.	Total Nitrogen.	Per Cent. Nitrogen as							
		Urea.	Ammonia.	Creatinine.	Creatine.	Allantoin.	Uric Acid.	Purine Bases.	Undetermined.
2–3	8.04	84.4	2.3	3.8	2.0	1.8	0.3	0.4	5.0
3–4	7.64	83.6	3.2	4.2	1.8	1.7	0.4	0.4	4.7
4–5	6.40	80.3	4.3	4.2	2.5	1.5	0.5	0.5	6.2
5–6	5.78	79.8	6.3	4.9	2.5	1.7	0.4	0.5	3.9

OPERATED SHEEP—WEIGHT 15 KILOGRAMS.

1–2	3.83	84.4	1.8	3.5	1.2	2.1	0.4	0.7	5.9
2–3	6.82	85.8	1.6	2.4	2.1	1.1	0.2	0.4	6.4
3–5	4.98	84.5	2.4	2.5	3.1	1.4	0.3	0.4	5.4
5–6	2.31	76.6	2.2	2.5	5.9	1.5	0.5	0.5	10.3

Nitrogen partition in the urine of the normal sheep is seen to follow the general mammalian type, the only point worthy of special note being the comparatively small proportion of purine nitrogen excreted as allantoin. In the urine of the thyroidectomized animal the only constituents apparently affected are ammonia and creatine. The percentage of the first is lower than the normal at corresponding stages of starvation. (One only of the three operated sheep—the one least affected by fasting—showed figures similar to the controls.) The creatine rises early in the fast to a higher level than the creatinine. The significance of this "creatine crossing" is not clear. It might be supposed to be related to the susceptibility of the animals to withdrawal of food; but, curiously, in the one subject that survived a week, creatine exceeded creatinine from the very first day of observation.

Complete data will be published shortly.