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Adrenal Hypertrophy in Experimental Uremia.

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The adrenal glands, of individuals who die in the uremia of terminal hemorrhagic Bright's Disease, are usually larger than those obtained at post-mortem following death from other causes. An increase in the size of the adrenals, which is probably of the same nature, results from experimental uremia in the albino rat.

The adrenal glands of a group of uremic male rats, (average blood urea 566 mgm. per 100 ml.) 90 days of age, weighed 65 per cent more than the adrenals of their control group (average blood urea 30 mgm. per 100 ml.). This was measured when killed 65 hours after being doubly nephrectomized. Neither group was allowed food during this period. In a group of female rats, 180 days of age, the hypertrophy amounted to 46 per cent during the same length of time. The dried adrenal weights showed less, and the defatted weights a markedly less increase in weight, showing that the increased weight is due in part to lipid substances.

Preliminary measurements, of serial sections of half of the glands of each experiment, indicate that the volume change is proportional to the weight change, and, that the cortex alone is concerned in the hypertrophy. This cortical hypertrophy, which ensues in experimental uremia, is probably due to the abnormal retention of metabolites, and analogous to the hypertrophy, known to result from chronic infections and following foreign protein injections in the production of antisera. We have recently found a similar adrenal enlargement to take place in the rat, as a result of chronic intoxication with morphine.