3. Isolated smooth muscle of uterus and intestine gave evidence of stimulation by cocaine, 1:10,000, in tissues where the sympathetics are motor. Where the sympathetics are inhibitory, on the other hand, an inhibition of rhythmic contractions was always obtained following the use of 1:10,000 cocaine. The tonicity of the muscle in the latter case showed a phase of inhibition and a phase of increased tone.

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Comparative metabolism of hydantoin and beta-methyl hydantoin.

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In previous experiments[1] it was pointed out that when beta-methyl hydantoin is given subcutaneously to dogs only fifteen per cent of the compound reappears unchanged in the urine. A similar amount is excreted as methyl hydantoic acid. But while all of the nitrogen of the compound was excreted, the remainder was unaccounted for in the nitrogen partition. Immense amounts of oxalic acid were found in the urines during experimental days, and this suggested hydrolysis of methyl hydantoic acid to methyl urea and glycollic acid, with oxidation of the latter to oxalic acid. Supplementary experiments have thrown doubt upon excretion of a large amount of methyl urea, hence the possibility of origin of the oxalic acid found from a substance such as methyl parabanic acid, in the method of determination, is being considered.

Experiments have also been carried out in which hydantoin and hydantoic acid were administered. In keeping with the findings of Lewis[2] no evidence of urea or ammonia formation was obtained. When hydantoin was given there was, however, an increase in organic acid excretion corresponding to elimination,

[1] Gaebler, O. H., *Proc. Am. Soc. Biol. Chem.*, 1925, lvii, 55.

[2] Lewis, H. B., *J. Biol. Chem.*, 1912-13, xiii, 347.

as hydantoic acid, of one-half of the compound administered. Similarly, the apparent rise in creatinine excretion, due to elimination of unchanged hydantoin, was only half as great as it would have been had all of the compound been excreted unchanged. The rise in total nitrogen again accounted for all of the compound, and the amount of benzal hydantoin,[3] isolated from the urine after hydrolysis, justified the assumption that all of the compound is excreted either unchanged or as the corresponding acid.

While hydantoin therefore undergoes partial hydrolysis to the corresponding hydantoic acid, it is very resistant to further destruction in the body, as compared with the previously investigated methyl derivative.

[3] Wheeler, H. L., and Hoffman, C., *Am. Chem. J.*, 1911, xlv, 368.