recently subjected to operative procedures the tonus of the sphincter is found to be comparatively low. It is under such conditions that motor effects are obtained. On the other hand the records indicate a gradual recovery of tonus in the sphincter muscle after operation if the animal is not disturbed, and a sudden and permanent increase in tonus if morphin is administered. When these conditions are established the response to adrenalin is characteristically inhibitory.

It appears, therefore, that adrenalin increases the tonus of the pyloric sphincter when the muscle is relaxed and decreases it when the muscle is contracted. It will be recalled that these results correspond to those described by Carlson and Litt[2] as following stimulation of the sympathetic nerve supply.

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The conjugation of benzoic acid in rabbits.

WENDELL H. GRIFFITH.

[*From the Department of Biological Chemistry, St. Louis University School of Medicine, St. Louis, Mo.*]

A study has been made of the excretion of free benzoic acid, hippuric acid, and total combined benzoic acid in the urine of normal adult rabbits following the administration of sodium benzoate. The maximum rate of synthesis of hippuric acid occurred after the ingestion of 0.5 gm. of benzoic acid per kilo. Larger doses of benzoic acid increased the rate of excretion of combined benzoic acid but not that of hippuric acid. In the 24 hour period following the administration of 1.0 gm. of benzoic acid per kilo, the average excretion of hippuric acid in six rabbits was 82 per cent of the combined benzoic acid, the individual variations ranging from 65 to 90 per cent. These urines contained an ether-soluble, non-fermentable reducing substance which gave a positive naphtho-resorcin test. Therefore, it was concluded that 10 to 35 per cent of the combined benzoic acid excreted by the six rabbits was benzoyl glycuronic acid. It has

[2] Carlson, A. J., and Litt, S., *Arch. Int. Med.*, 1924, xxxiii, 281.

long been known that the rabbit excreted benzoyl glycuronic acid following benzoate administration, but it has generally been assumed that this substance was present only in traces. These experiments indicated that the extent to which the rabbit detoxicates ingested benzoate by conjugation with glycuronic acid has been underestimated.