metabolites which are known to occur in the urine after the administration of aniline to rats *in vivo* (Parke, 1960).

A.B. is an M.R.C. Scholar.

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The effects of electrical stimulation of the sympathetic nerves on the size and mitotic index of rat salivary glands

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Catecholamines can influence cell proliferation in rat salivary glands. The sympathomimetic compound isoprenaline causes both hyperplasia and hypertrophy of the parotid and submaxillary acinar cells (Selye, Veilleux & Cantin, 1961). Evidence that electrical stimulation of the sympathetic nerves itself can also cause both hyperplasia and hypertrophy has recently been obtained (Muir, Pollock & Turner, unpublished observations) and the present demonstration illustrates the methods used.

Rats were anaesthetized and one superior cervical nerve tract stimulated supramaximally for 1 h (20 Hz, 1 ms, for 30 s min^{-1}). Glands on the contralateral side acted as controls. Hypertrophy was estimated by:

(a) comparing the lengths of two acinar axes from the stimulated glands with the corresponding axes from the controls (the longest axis and that at right angles to and at the mid-point of this axis).

(b) comparing the wet and dry weights of the stimulated glands with the controls. Hyperplasia was estimated by comparing the mitotic indices of the stimulated glands with the controls.

In one group of animals the wet and dry weights of the salivary glands were determined 33 h after the commencement of stimulation. In another group, to determine the mitotic index of each salivary gland, colchicine (1 mg/kg I.P.) was injected 28 h after the beginning of stimulation to arrest dividing cells in metaphase. These animals were then killed a further 8 h later. The lengths of the acinar axes were measured in the glands taken from this group of animals.

Electrical stimulation increased the weight and acinar size of the parotid and submaxillary glands and the mitotic index of the former. The major sublingual gland which receives no sympathetic innervation was unaffected.

C.J.T. is an M.R.C. Scholar.

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The response of the rat anococcygeus muscle to electrical stimulation of the inhibitory nerves and to drugs, using, simultaneously, mechanical and intracellular electrical recording techniques

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The rat anococcygeus muscle (Gillespie, 1972) has a high ($\approx$60 mv) stable resting membrane potential and shows no spontaneous activity (Gillespie, Creed & Muir, 1973).