EM 336 was less than that of any of the other compounds and was not reduced by dexamphetamine. This therefore appears to be a non-specific uptake by tissues other than the sympathetic nerves. The inability of EM 336 to accumulate in sympathetic nerves would explain its lack of adrenergic neurone blocking activity. However, uptake of EM 97 into the sympathetic nerves was at least as great as that of guanethidine and EM 311. Thus if the concentrations of guanethidine and EM 311 taken up by the sympathetic nerves were sufficient to block conduction in the nerve endings, EM 97 would be expected to have the same action. The fact that EM 97 has very low adrenergic neurone blocking activity supports the suggestion by Rand & Wilson (1967) that the local anaesthetic activity of these compounds is not relevant to their actions at sympathetic nerve endings.

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The effects of α- and β-adrenoceptor blocking agents on the responses of the rat uterus to catecholamines throughout the oestrous cycle

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It is well known that in dioestrus adrenaline, noradrenaline and isoprenaline have solely an inhibitory effect on the uterus of the rat. Isoprenaline is the most active and noradrenaline the least active in this respect. Stimulation of the hypogastric nerve also has an inhibitory effect. In 1949 Mann showed excitatory responses to adrenaline, noradrenaline and stimulation of the hypogastric nerve when the rat was in oestrus. More recently other workers have contributed to this study with conflicting results (Rudzik & Miller, 1962; Levy & Tozzi, 1963; Diamond & Brody, 1966; Tothill, 1967).

A study has been made of both α- and β-adrenoceptor blocking agents on the effects of catecholamines on the uterus of the Wistar rat throughout the oestrous cycle. The stage of the cycle was determined by the vaginal smear. Contractions of the uterus *in vivo* were recorded by measuring the increase in the intraluminal pressure using a modification of the method of Bell & Robson (1937). Contractions of the uterus *in vitro* were recorded both isotonically and isometrically.

The results obtained from the *in vivo* studies were qualitatively the same as those obtained *in vitro*. The uterus from the animal in oestrus contracted when noradrenaline was given. Adrenaline in small doses caused an inhibition of the tissue and produced a biphasic effect of excitation followed by inhibition in larger doses. Electrical stimulation of the hypogastric nerve caused an excitatory response similar to that from noradrenaline. Throughout the cycle isoprenaline produced inhibitory responses and in no experiment was it possible to produce a contraction of the uterus with this catecholamine. Furthermore similar doses of isoprenaline were required to produce the inhibitory action at all stages of the cycle, whereas larger doses of adrenaline were needed to produce comparable inhibitory effects in oestrus to those in dioestrus.

Considering the effects of β-adrenoceptor blocking agents, it has been shown that in dioestrus propranolol converted the inhibitory effects of adrenaline, noradrenaline and hypogastric nerve stimulation to an excitatory response resembling that seen in oestrus. Conversely, the α-blocking agents tolazoline and phentolamine converted the effects seen in preparations from animals in oestrus to those resembling the responses of the uterus of the rat in dioestrus.

It is suggested that the number and/or the activity of the uterine α-adrenoceptors in the rat is increased in oestrus. An alternative interpretation of these results is that in oestrus the number and/or the activity of β-adrenoceptors is decreased, but it is considered that this is unlikely because the potency of isoprenaline in causing uterine inhibition was not appreciably different in the various stages of the oestrous cycle.

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Raspberry leaf tea: a new aspect to an old problem

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Therapeutic effects have been attributed to extracts of raspberry leaves at least since 1597 (Gerard, 1597). Despite this long practical experience the first scientific evaluations only took place in 1941 (Burn & Withell, 1941; Whitehouse, 1941). Beckett, Belthle, Fell & Lockett (1954) undertook an extensive chemical investigation in order to separate and establish the nature of the active constituents of raspberry leaves. They also carried out biological investigations, both in the whole animal and in isolated preparations. Since this time very little work has been done on the extract.

In the present study no attempt was made to separate the various fractions isolated by Beckett *et al.* (1954); instead 1 g of dried raspberry leaves was crushed and infused with 15 ml of saline at 95° C. The infusion was allowed to draw for 10 min and the mixture was filtered. The extract was applied to rat uteri in different stages of the cycle, uterine strips from pregnant rats, and strips from non-pregnant and pregnant human uteri.

The extract had little or no effect on uteri from non-pregnant rats, but inhibited the contractions of those from pregnant rats. A variable response was obtained in uteri in induced oestrus. Inhibition lasted 3–4 min and then intrinsic contractions were resumed. A second dose of extract again induced inhibition, so an adrenaline-