like resistance did not develop. The inhibitory effect was not prevented by propranolol (100 ng/ml).

In the concentration used, the raspberry leaf extract was without effect on the strips of human non-pregnant uterus, although this was difficult to evaluate since strips from non-pathological human uteri were not available. The extract contracted strips of normal human uteri at 10–16 weeks of pregnancy. The effect lasted for a few minutes and the intrinsic rhythm was then resumed.

In uteri in which a pharmacological effect was observed (pregnant human and rat uteri) the intrinsic rhythm observed over a 20 min period, while the extract remained in contact with the tissue, appeared to become more regular in most cases and contractions were less frequent.

Earlier writers have alleged that if pregnant women take raspberry leaf extract it has a beneficial effect on their subsequent labour, but the precise nature of this effect is never specified. A major problem in obstetrics is incoordination of uterine action, and it may be that raspberry leaf extract is able to modify the course of labour favourably by producing more coordinated uterine contractions.

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The effect of the interval between electrical stimuli on the acetylcholine output of the myenteric plexus-longitudinal muscle preparation of the guinea-pig ileum

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When the myenteric plexus-longitudinal muscle preparation of the guinea-pig ileum is stimulated supramaximally by electrical field stimulation with eserine and choline (20 μM) in the Krebs solution, the output of acetylcholine per stimulus is higher at a frequency of 0·1 Hz than at 1 Hz (Cowie, Kosterlitz & Watt, 1968; Paton & Zar, 1968). It has now been found that, when the stimulus frequency is reduced further, the output increases until a maximum of (250 ng/g)/stimulus is reached at a frequency of 0·016 Hz. This output is about 1% of the total acetylcholine content of the preparation.

With such large outputs it was possible to determine the output due to a single stimulus by removing the bath fluid for assay of acetylcholine 15 s after the application of the stimulus. When this output was compared with that obtained during a collection period of 4 min during which four stimuli were applied at a frequency of 0·016 Hz, it was found that there was no spontaneous transmitter release between stimuli; that is, the usual spontaneous output was depressed. Similarly, the output due to a single train of ten pulses at a frequency of 10 Hz was not different from that due to a single pulse. When the effect of a test pulse applied at varying intervals after a conditioning pulse was investigated the test pulse had no effect on acetyl-

choline output for at least 5 s after the conditioning pulse. After 10 s the test pulse had only a very small effect, after 20 s the acetylcholine output was about 50% of the normal output and after 60 s there was no longer any interaction between pulses. When the responses of the longitudinal muscle were recorded in the absence of eserine, no such interaction was found even at pulse intervals as short as 2 s. These observations suggest that the suppression of the acetylcholine output from the nerve terminals occurs in the presence but not in the absence of eserine. A poststimulatory inhibition of acetylcholine release in the presence of eserine was also found at higher frequencies (0·1 and 0·5 Hz), but it was not so marked.

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The release of prostaglandin E_2 from the bovine iris

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Ambache (1957, 1959) extracted from iris tissue a pharmacologically active material which he called irin. This material is now thought to contain prostaglandin (Waitzman, Bailey & Kirby, 1967). Prostaglandin $F_{2\alpha}$ ($PGF_{2\alpha}$) has been isolated from the sheep iris (Änggård & Samuelsson, 1964) and irides of cat and rabbit are thought to contain PGE_2 and $PGF_{2\alpha}$ (Ambache, Brummer, Rose & Whiting, 1966). Mechanical stimulation of the rabbit eye causes the release into anterior chamber perfusates of an active substance (Ambache, Kavanagh & Whiting, 1965). The present experiments investigate the release from the bovine isolated iris of a substance tentatively identified as PGE_2.

A loop of iris was cut 3–4 mm from the pupillary margin and suspended in Krebs solution at 37° C and bubbled with 5% CO_2 in O_2. The tissue was left for 2 h and slowly acquired a constant level of tone; the bath fluid was then collected at hourly intervals, and tested on isolated preparations. The rat fundus, chick rectum and rabbit duodenum responded with contractions resistant to hyoscine, mepyramine and bromolysergic acid diethylamide. The active material partitioned into ether from an acidic aqueous phase and was unaffected by incubation with chymotrypsin. Assay after paper chromatography showed 5-hydroxytryptamine and related substances to be absent from ether extracts. Preparative thin-layer chromatography using the A I and A II systems of Gréen & Samuelsson (1964) indicated the presence of PGE_2. Eluates relaxed guinea-pig colon spiral strips which relax to E-type prostaglandins and contract to F-type compounds (Fleshler & Bennett, 1969). Loss of activity of both PGE_2 and the extract occurred on mild alkaline hydrolysis whilst that of $PGF_{1\alpha}$ and $PGF_{2\alpha}$ was unaffected. The prostaglandin antagonist SC 19220 (Sanner, 1969) specifically inhibited responses of rat fundus to PGE_2 and to the bath fluid extract.

Resting release (mean$\pm$S.E. of mean) from twenty-nine irides assayed on rat fundic strips as PGE_2 was (0·91$\pm$0·09 μg)/g. This release did not appear to be neurogenic in origin since output was unaffected by tetrodotoxin (2×10^{-8} g/ml) or