a potentiometer to a digital voltmeter. The heights of peaks on a record can be read or punched out digitally to $\pm 0{\cdot}1$ mm. Small excursions on ultraviolet oscillograms can thus be analysed to their limits of accuracy.

The record is scanned by a magnifying lens and cursor mounted on a saddle which slides along a helical groove of 15 mm pitch on a brass rod of 18 mm diameter, as shown in Fig. 1.

The rod is connected to the spindle of a ten-turn potentiometer which is activated by two mercury cells. The activating voltage can be adjusted to calibrate the potentiometer against a calibrating scale on the record.

A method for heating and cooling the hypothalamic area of the conscious cat's brain with simultaneous perfusion of the third ventricle

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A method is demonstrated which can be used to vary the temperature in the region of the hypothalamus and third ventricle with simultaneous recording of hypothalamic and deep body temperature and perfusion of the third ventricle or administration of drugs to the third ventricle.

The method for altering the hypothalamic temperature is a modification of that described by Hellon (1967). A stainless steel plate is screwed into the skull and four water thermodes implanted. The temperature of the water passing through the thermodes may be changed by the use of an external heating coil, controlled by a variable D.C. power supply. The hypothalamic temperature is measured by implanting a thermistor mounted in the end of a fine stainless steel cannula, the external end of which is attached to the stainless steel plate. A " push-pull " cannula is implanted with the tip lying in the third ventricle and with the external end also attached to the stainless steel plate. Fluid is circulated through the cannula using a modified Braun infusion pump. Rectal temperature is measured with a thermistor probe, and the hypothalamic and rectal temperatures are displayed on a Honeywell chart recorder. All surgical procedures were carried out under pentobarbitone anaesthesia.

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Actions and interactions of prostaglandins administered intradermally in rat and in man

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Prostaglandin E_1 induces an increased vascular permeability in the skin of the guinea-pig (Horton, 1963) and rat (Kaley & Weiner, 1968). Following identification

of E-type prostaglandins in rat inflammatory exudate (Willis, 1969) we have tested the effects of prostaglandins (PG) E_1, E_2, $F_{1\alpha}$ and $F_{2\alpha}$ on vascular permeability in skin.

In female Wistar rats (130–140 g) anaesthetized with methohexitone sodium (40 mg/kg intraperitoneally) PGE_1 and PGE_2 induced an increase in vascular permeability as shown by extravasation of pontamine blue (100 mg/kg intravenously). Their potency compared well with that of other putative mediators of inflammation (bradykinin, histamine and 5-hydroxytryptamine). The threshold for PGE_2 was about 1 ng. Prostaglandin $F_{1\alpha}$ and $PGF_{2\alpha}$, however, were almost without effect, even with microgramme doses.

Pretreatment with mepyramine maleate (2.5 mg/kg) greatly reduced the response to PGE_2 and the addition of methysergide bimaleate (2.5 mg/kg) gave complete inhibition. This indicated that the permeability increase induced by PGE_2 was predominantly due to histamine release.

$PGF_{2\alpha}$ (500 ng) administered intradermally with PGE_1 and PGE_2 reduced the permeability response to these substances. The effects of compound 48/80 (25 ng) were similarly inhibited although those of histamine (1 μg), bradykinin (1 μg) and 5-hydroxytryptamine (100 ng) were undiminished. $PGF_1\alpha$ did not possess this inhibitory effect against E-type prostaglandins or compound 48/80.

In man PGE_1 and PGE_2 injected intradermally (50 or 100 ng in 0·05 ml. of sterile pyrogen-free saline) induced local oedema and redness, usually with marked pseudopodia formation: no discomfort was observed. The reaction reached a maximum between 15–30 min after injection and had subsided after 1–2 hr $PGF_{2\alpha}$ (5 μg) gave a weal which was much more localized.

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