Table 1 Local vascular changes caused by immersion of rat hindpaws in water at 60° C for 30 s, $n = 5$

	Oedema	*Blood flow*		*Blood volume*		*Albumin accumulation*	
	Injured paw weight % of control paw	*% cardiac output*	*% of flow in control paw*	*ml*	*% of content in control paw*	*ml*	*% of content in control paw*
Control paw	100	0.29± 0.06	100	0.05± 0.01	100	0.06± 0.01	100
Injured paw	132.2± 4.1	3.71± 0.56	1279	0.13± 0.01	260	0.74± 0.11	1233

stimulus was immersion of the paw in water at 60° C for 30 seconds. The changes measured 15 min after the burn indicate a large increase in blood flow to the injured paw with marked accumulation of albumin in the tissue and a small increase in blood content.

The use of a mass spectrometer for the analysis and measurement of trace concentrations of anaesthetic vapours

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The possibility of untoward effects resulting from the long term exposure to low concentrations of certain anaesthetic vapours has recently caused concern amongst some anaesthetists. Various methods have been devised to minimize the concentration of these vapours in the operating theatre and in order to judge their effectiveness it has been necessary to devise a method of accurately measuring the concentration of the vapour remaining in the operating room. Since other vapours may be present in relatively high concentrations it is important to ensure the method used is specific for the particular vapour being studied. It is also important to have a method of providing standard concentrations of the gas in the parts per million range.

An ideal instrument for such an investigation is a mass spectrometer since it is capable of measuring very low concentrations and can be specific for any particular vapour under investigation. The instruments that will be demonstrated are quadrupole mass spectrometers capable of measuring ions of up to 200 at. mass units in concentrations as low as one part per million.

A method of producing calibration vapours in the parts per million range by continuous serial dilution has been developed. The problems associated with stabilizing high flow rates through rotameters were overcome by using a fluidic device which ensured a high stability of flow rate into the dilution circuit.

The technique is at present being used to study the rate of loss of vapours from anaesthetic tubing both during use and during periods when, though not in use, vapours absorbed by the tubing may pollute the surrounding atmosphere.