The point I wished to make in what was clearly speculation on the most favourable conditions for application of formaldehyde gas and low temperature steam to micro-organisms was that relatively dry gaseous formaldehyde was in fact effective. Nordgren states on page 79, 'Secondly the results show that relatively dry gaseous formaldehyde in low concentration, at least at a higher temperature, is capable of killing spores which are considerably dry. These results already argue against the popular opinion that formaldehyde gas can only kill bacteria on moist disinfection or sterilisation objects'.

Nordgren then goes on to show, on page 81, that with increase in percentage of water vapour there is a rise in bactericidal efficacy up to 50%, but little thereafter. Topley and Wilson (1975) consider 60-90% relative humidity to be the range in which formaldehyde acts best. These conditions are met by drawing a vacuum without steam pulsing, injecting formaldehyde gas first, and then injecting steam (Alder, 1977).

In modern low temperature steam and formaldehyde autoclaves a serious cause of failure to kill test microorganisms seems to be the problem of condensation. Unless steam can always be guaranteed to be dry, if necessary possibly by slight superheating by a relatively hotter jacket, condensation will occur in paper, fabric, and narrow lumina, and sterilisation may not be achieved as the formaldehyde will be obstructed (Nordgren, 1939, p. 152,) or will be absorbed, and polymerisation encouraged (Walker, 1964). This is, I think, the real problem.

The whole matter of the best cycle for low temperature steam and formaldehyde is at present under investigation here and at other centres, and it is hoped that questions such as that raised by Dr Edmunds may soon be answered.

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Cytological urine screening

We were interested to read the article by Freni *et al.* (1977) on erythrocyturia, recently published in this Journal, because at an early stage of an industrial cytological urine screening programme we also encountered higher than expected red and white cell counts.

Using a modified millipore filtration method, of the first 185 urines examined, 37% contained 5-6 red blood cells per high-power field, and in a further 16% the red cell content was higher and occasional clumps of white cells were found.

Because of the sinister significance usually attached to the presence of blood and to exclude the possibility of occult infections, a small pilot study was carried out on a group of 32 workers from a particular factory. These were people who at one time had handled carcinogens and they were compared with 32 people from the same factory who did not work with chemicals. A careful history was taken from all and the urine was examined cytologically and by conventional routine analytical methods including dip spoon culture.

On cytological examination red and white cells were found in 40% of cases in both groups and they were present in somewhat higher concentrations in the chemical handlers than in the controls. Cells were not found by conventional methods and all cultures were negative. In no case was hypertension found and no urological symptoms were present. In a follow-up after six months 60% showed no change in their previous cytological status.

Cytological methods of examination are obviously much more sensitive than the conventional ones used up to now, and it may be that a base line for 'physiological' levels of excretion of red and white cells will be found, but large-scale surveys will be necessary to assess the significance of this microhaematuria. It does become apparent, however, that standardisation of methods of preparation, at least within a laboratory, will be essential.

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