SACHS'S MEDIUM FOR THE STORAGE OF DONOR EYES* **A RECENT TRIAL**

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IN recent months the use of Sachs's medium for the storage of donor eyes (Sachs, 1957) has been investigated in an endeavour to find a more suitable medium than liquid paraffin. Over the course of approximately 5 months, Sachs's medium was used for the storage of alternate pairs of donor eyes; a total of 28 eyes being used in the investigation.

Results

Of these 28 eyes, fourteen were found to be sterile on routine culture, and the remaining fourteen were contaminated with pathogenic organisms. A contamination rate of 50 per cent. is felt to be unsatisfactory.

According to Sachs, the colour of the medium should indicate sterility or bacterial contamination at a glance, without waiting for a culture report, but in this investigation the colour of the medium never changed with sterility or contamination, so that routine culture reports still appear to be necessary.

Ideal storage conditions include osmotic equilibrium between medium and eye, and according to Sachs, slight hypertonicity is justifiable in practice and prevents excessive hydration of the cornea. The majority of eyes in this investigation showed considerable loss of volume after several days' storage, indicating that the hypertonicity of the medium was too great.

The vitreous in these eyes was found to be considerably darker and more viscous than usual, often containing pigmented strands, and in only four eyes was it in a satisfactory condition and suitable for use in cases of retinal detachment.

In most of the sterile eyes the corneae remained fairly clear.

According to Sachs, eyes stored in his medium remain in a better condition and show less degenerative changes after 14 days' storage than eyes stored in liquid paraffin, but the general appearance of the eyes used in this investigation did not support this claim.

The use of nutrient agar and a sugar in a storage medium would appear to be undesirable from a bacteriological point of view, and a non-nutrient medium would seem preferable.

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The inclusion of phenol red as indicator did not prove to be of value.

The inclusion in a storage medium of chloramphenicol and streptomycin, both of which have known toxic effects, may have detrimental effects on eyes stored for more than 24 to 48 hrs.

Summary

- (1) Sachs's medium did not prevent or eliminate bacterial contamination.
- (2) Bacterial contamination was not indicated by a change in the colour of the medium.
- (3) Osmotic equilibrium between the medium and the eye was not maintained, the majority of eyes stored in the medium showing considerable loss of volume.

REFERENCE

- SACHS, A. (1957). *Brit. J. Ophthalm.*, **41**, 558.