tion is absorbed in a 40-μm film and so a change in the angle of incidence of the radiation will produce negligible changes in response. The refractive index of polysulphone between 315 and 330 nm was 1.63 and at an angle of incidence of 80° the increase in path length was about 25% relative to radiation normally incident on the film. At this angle of incidence, about 20% of the incident radiation was reflected, so the overall effect on the increase in absorbance was minimal.

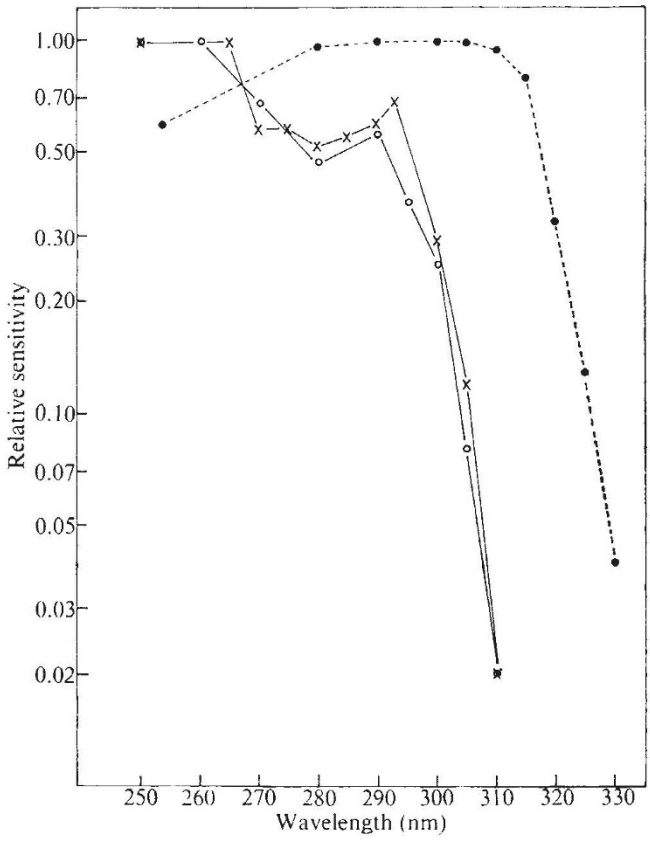
From a calibration curve of the type shown in Fig. 2 it is possible to relate the change in absorbance of a film irradiated by heterogeneous ultraviolet radiation of known relative spectral distribution to an equivalent exposure (F) of 297-nm radiation. The effective erythemal dose (D) at 297 nm is then given by

$$D = F\left[\frac{\int I(\lambda)E(\lambda)\mathrm{d}\lambda}{\int I(\lambda)G(\lambda)\mathrm{d}\lambda}\right] \quad (1)$$

where $I(\lambda)$ is the relative spectral distribution of the incident radiation at wavelength λ, $E(\lambda)$ is the erythemal effectiveness at wavelength λ relative to that at 297 nm, assuming the mechanism of response does not change with wavelength and $G(\lambda)$ is the spectral sensitivity of polysulphone in terms of absorbance change, ΔA_{330}, at wavelength λ relative to that at 297 nm, as the biological effects produced by this wavelength have been studied extensively.

The results of this preliminary study of polysulphone as an ultraviolet dosimeter look promising. The method is being used to measure the ultraviolet exposure of bedridden geriatric patients, laboratory personnel working indoors for an 8-h day and hospital gardeners, with a view to estimating the amount of solar radiation needed for the synthesis of vitamin D in the skin. It is hoped that the results will help to quantify previous observations[8,9].

Fig. 3 Action spectra of polysulphone and human skin. ●, Polysulphone; ——, human skin; ×, ref.6; ○, ref.7.



Although the reproducibility of response of the polysulphone film to a known spectral distribution is of the order of 5%, it is important to know the uncertainty associated with the transformation of polysulphone response to an effective biological dose. This error depends on the nature of the ultraviolet environment and the action spectrum of the biological process under consideration. Careful attention must be paid to the action spectrum of the process to ensure that it declines to zero while the action spectrum of polysulphone is finite. The possibility of making the film thinner and therefore obtaining a better match with the erythema action spectrum is being investigated.

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Erratum

In the article "Similarities in the helical sequences of the repressor-binding sites in the *lac* and λ operators" by M. C. O'Neill (*Nature*, **260**, 550; 1976) the recurring face sequence displayed on page 552 should be

$$\begin{matrix} \binom{T}{A} & & \binom{A}{T} & & \binom{C}{G} \\ AA & - - & CTC & - - & CG \\ TT & - - & GAG & - - & GC \end{matrix}$$

Correction

In the article "Nalidixic acid and bacterial chromosome replication" by G. C. Crumplin and J. T. Smith (*Nature*, **260**, 643; 1976) Figs 2 and 3 have been transposed.