BROCKMANN grading of the alumina could have differed only slightly before and after the first batch of rotenone was passed down the column since the distances travelled by the Sudan-Yellow dye were 3.7 and 3.3 cm respectively.

The amount of alumina surface exposed by the solvent in the first run was sufficient to considerably affect the irreversible adsorption of rotenone but insufficient to appreciably affect the average activity of the alumina as determined by the BROCKMANN method.

It can be concluded from this work that whereas reversible adsorption processes are unaffected by the changes occurring in "dry" alumina on storage, the chromatographic recoveries of small quantities of materials which are labile to alumina may be profoundly affected when dry strongly hydrophilic solvents are being used.

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A simple elution device for the automatic stepwise chromatography of lipids*

Several reproducible column chromatographic techniques are available which employ discrete changes in mobile phase composition for the analysis of lipid extracts. However, the frequent attention of the operator is required for the addition of each discrete mobile phase. Also, inconsistency in the addition of the phase solvents may decrease the reproducibility of these methods.

A simple reservoir apparatus was designed for use in conjunction with an automatic fraction collector to facilitate the use of these methods. This device is best employed with a chromatographic system requiring five or less mobile phase changes.

The different solvent phases are placed into each numbered reservoir, as illustrated in Fig. 1. The reservoirs are filled in reverse order, starting with number 5. If all five reservoirs are not needed for the system utilized, the remaining unused upper reservoirs can be left empty without affecting the efficiency of the device. After the required reservoirs are filled, the center capillary tube is cleared of mixed solvents by opening the stopcock carefully to allow flushing of the tube with solvent from the uppermost reservoir. The device is then connected to the column so that the standard taper outlet enters onto the column. When the stopcock is opened, the mobile phase

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in reservoir 1 is the first to enter the column, followed in order by those in reservoirs 2, 3, 4 and 5. Although the apparatus is designed on a gravity flow principle, a simple manifold fitted to the tops of the capillary tubes enables the system to be run under pressure. After setting up the reservoir device with the column and automatic fraction collector, no further attention is required by the operator.

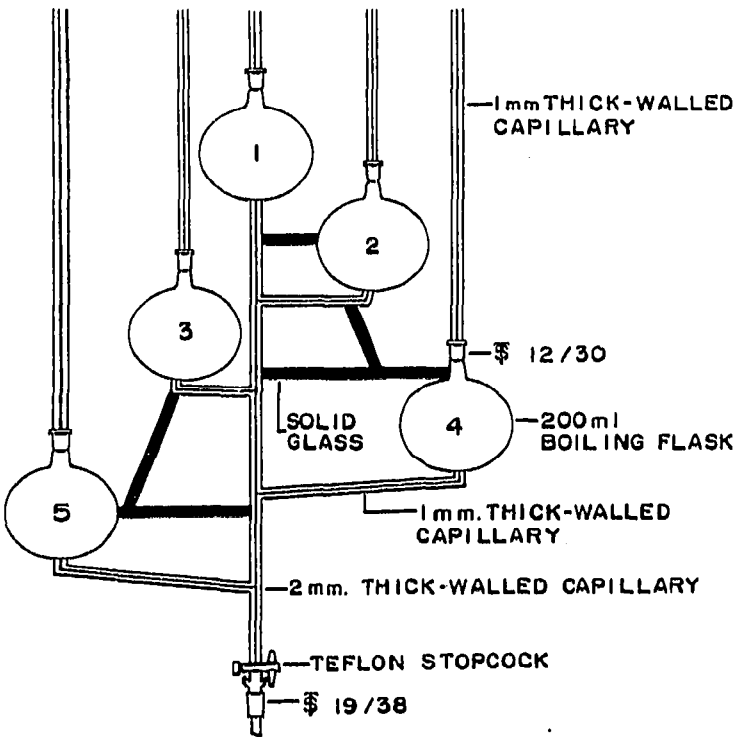

Fig. 1. The elution device. The order of phase delivery is from reservoirs 1, 2, 3, 4 and 5, respectively

Colored indicators were used initially to check the uniformity of flow from the reservoir. Only an insignificant amount of phase mixing was noted, and this was a constant, reproducible factor for all runs. This apparatus has been used in our laboratory with excellent reproducibility in conjunction with the FILLERUP AND MEAD procedure[1], which utilizes five mixed solvent eluting fractions and a silicic acid column for the separation of lipid mixtures.

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