glass columns and can operate with a low pressure drop. These features therefore permit separations which are not feasible with other columns.

Graphitized carbon black is a thermally stable, inert, non-specific and non-porous adsorbent. Its use in gas–solid chromatography for the separation of some hydrocarbons from their deuterated homologues was pointed out by YASHIN[6].

The interaction energy on this material depends upon the geometrical structure of the molecules and of the adsorbent surface and on non-specific dispersion forces acting between them. It seems that the different sizes of hydrogen and deuterium and the greater mobility of the deuterium compounds should be the determining factors which affect the different adsorption of the isotopic molecules.

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Rapid method for calculating percentage recoveries of compounds from gas chromatograms

In studies on food flavours it is often desirable to know the efficiency of isolation of the volatile organic compounds responsible for a particular flavour. This is usually done by experiments on model systems where known amounts of compounds resembling the unknown in boiling point and other characteristics are added to the food, and are isolated by the appropriate technique. The percentage recoveries are often determined by comparing the peak heights of gas chromatograms of a standard solution of the compounds in an organic solvent with a chromatogram prepared with the isolated compounds.

Using this approach FORSS AND HOLLOWAY[1] have investigated the recoveries of added C_{2-10} *n*-alkan-1-ols and C_{3-12} alkan-2-ones from butter oil by molecular distillation and reduced pressure steam distillation. The yields were calculated by measuring the relative peak heights of the compounds in the gas chromatograms.

A more rapid and simpler method for the calculation involves the use of the graph illustrated in Fig. 1. The peak height on the standard chromatogram is measured with a pair of dividers. The point on the graph (B) where this distance (AB) corre-

sponds with the 100 % line, in Fig. 1 is noted. In this example B is 4.45. The equivalent peak height on the chromatogram of the recovered mixture is then measured with the dividers and the percentage recovery can be observed directly from the position of the dividers at 4.45 (B) along the line AB, in this case 85 % (BC)

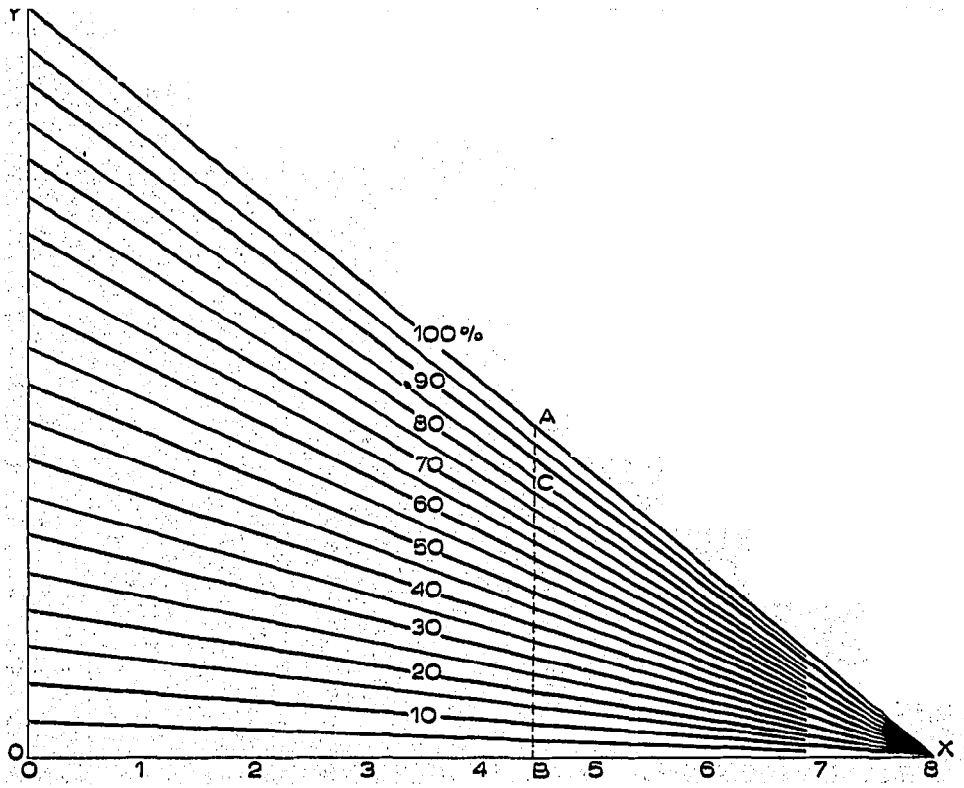

Fig. 1. Graph for determination of percentage recoveries.

A similar device has been described by BARRETT[2] for the measurement of R_F values in paper and thin-layer chromatography. In our case, it was necessary to include a linear scale along the x-axis. Additional lines at 5, 15, 25 % etc. increased the precision and the use of a triangle rather than a trapezium made it possible to work with very small peaks. The use of graph paper made it easy to keep BA vertical. The maximum height of a peak that can be calculated is determined by the distance at OY. In our case 8 in. was sufficient.

Alternatively, the scale may be traced onto celluloid and the device moved from peak to peak on gas chromatographic records. We preferred the former method using graph paper and dividers.

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