During the AMD procedure, fractions are focused into narrow bands with a typical peak width of about 1 mm. This allows the separation of multicomponent mixtures that had no chance of being separated by TLC in the past (10). The fully computer controlled AMD 2 instrument (CAMAG) (Fig. 9) features five bottles from which solvents can be drawn by syringe action to form the gradient. A charge-coupled device (CCD) monitors the migration distance of the mobile phase, and the drying time can be varied for each development step. AMD is a very reproducible technique. Typical fields of application include analysis of pesticides (11) and lipids (12) and screening for biological activity (13).

IV. DERIVATIZATION

A. General Aspects

It is an inherent advantage of planar chromatography that fractions are stored on the plate and can readily be derivatized after chromatography in order to be rendered detectable, improve detection limits, or selectively change properties of sample components. Substances that are not responding to white or UV light after chromatography need to be reacted with chromogenic or fluorogenic reagents. There are two general considerations for reproducible results: (1) transfer of the reagent must be controlled and homogeneous, and (2) if a heating step is part of the derivatization, the entire plate must be heated uniformly.

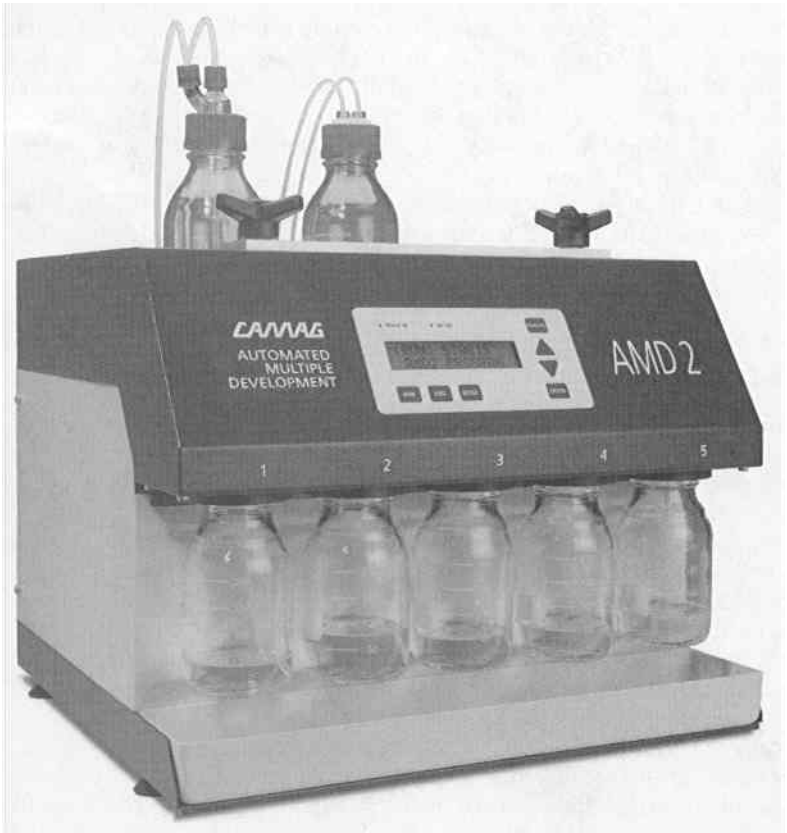

Figure 9 AMD 2 (CAMAG).