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## A COMPUTER-CONTROLLED SCRAPER FOR STANDARD THIN-LAYER PLATES\*

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### SUMMARY

A system which sequentially scrapes selected spots from any area on standard 20 × 20 cm thin-layer plates and collects the adsorbent in a solvent in individual vials under direct control of a time-shared PDP-8L is presented. The main parts of the system are: scraper unit, adsorbent capture unit with slurry trap and sample collector. The scraper unit functions as an X-Y plotter with a milling head equipped with a suction manifold replacing the pen. Scraped adsorbent is transported by suction to the adsorbent capture unit where mixing with solvent takes place in a swirl chamber. Aspirated air escapes through a top tube via a suction buffer to a filter pump while the slurry accumulates at the bottom in the slurry trap. After completion of scraping of one spot the slurry is pumped into a sample collection vial. Solvent wash of swirl chamber and slurry trap is optional.

Items of importance for proper sequencing and statistics on a comparison between automatic and manual scraping and carry-over figures are presented.

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### DISCUSSION

GOLDMAN: Dr. MUSIL, I have two enquiries.

(1) Do you find that the extraction of solute from the adsorbent is complete, and if not, does the automation of the procedure produce a constant extraction efficiency.

(2) I think I saw a connecting arrow in the final slide of a flow chart, connecting "TLC" to "IR densitometry". Am I mistaken and if I am not will you briefly describe "TLC, IR densitometry", as I am not familiar with this technique.

MUSIL: (1) We used direct counting of adsorbent in a scintillation solution as reviewed here by SNYDER. Table I (p. 138 of the full paper) describes a comparison between automatic and manual scraping. We used labeled free cholesterol and cholesteryl esters containing <sup>3</sup>H and <sup>14</sup>C. The extraction efficiency was excellent (other experiments were carried out later with triglycerides and fatty acids). We used Bray's solution without water as recommended for the Tricarb spectrometer by the producer.

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\* An extended version of this paper was published in *J. Chromatogr.*, 63 (1971) 131-139.

(2). Infrared spectroscopy was mentioned on the basis of the literature only<sup>1</sup>, as a suitable type of analysis which could be automated and computerized.

#### REFERENCE

- 1 D. CHAPMAN, *J. Amer. Oil Chem. Soc.*, 42 (1965) 353.