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Journal of Chromatography A, 935 (2001) 1

JOURNAL OF
CHROMATOGRAPHY A

www.elsevier.com/locate/chroma

Foreword

Much has happened in lipid chemistry since Professor Walter R. Bloor, who had given the field that name, introduced me to it about 60 years ago. The large quantities of organic solvents (e.g., the Bloor mixture) we used then would make today's OSHA and US Environmental Protection Agency officials blanch, and the tricks we had to use for breaking up the emulsions that formed in separatory funnels are now the stuff legends are made of.

Chromatography, which is now 100 years old, was then still practically unchanged from the way Mikhail Tsvet knew it. It will be recalled that Tsvet's experiments dealt with the nonsaponifiable matter of plants, and chromatography on gravity-fed adsorption columns was still the method chemists like Edgar Lederer and László Zechmeister, used for separating chloroplast pigments.

The younger generation of lipid chemists tried to coax paper chromatography into serving for hydrophobic compounds by a variety of tricks, but the Tsvet columns were not replaced until thin-layer chromatography came along. The big surprise was that gas chromatography was applicable to heat-labile lipids, provided they were appropriately derivatized.

Today's students of lipid chemistry hardly realize what a long and rocky road analysts had traveled until they could use today's elegant forms of high-performance liquid chromatography and gas chroma-

tography, coupled with mass spectrometry. One of the greatest boons to analysts has been solid-phase extraction in its various forms. No more dangerous solvents, no more intractable emulsions!

The present volume draws on examples from various classes of nonsaponifiable lipids to illustrate the modern state of affairs. Not that Zechmeister could not separate isomeric carotenoids by his clumsy method of extruding the adsorbent from the column and slicing it like Hungarian salami, not that Reichstein could not isolate traces of cardiac genins from plants by his patient use of a lengthy sequence of eluents, but compare that with today's automated extraction and fractionation of steroid hormones in the urine.

What happened to the ingenuity and skill of the analyst? Ingenuity and skill are now the province of the engineer, who uses electronics to construct analytical instruments. No wonder that some of the finest work on lipid analysis comes out of the commercial laboratories previously regarded with disdain by the academic researcher. Of course, this does not apply to lipid analysis alone. Generalizing, we may say that most of the adventure and glory of solving difficult analytical problems has gone out of the academic laboratory and into the shops of the manufacturers of scientific instruments.

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