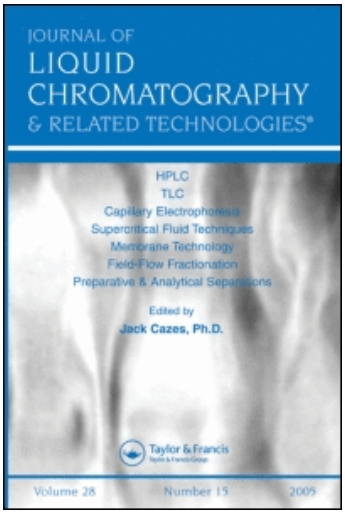


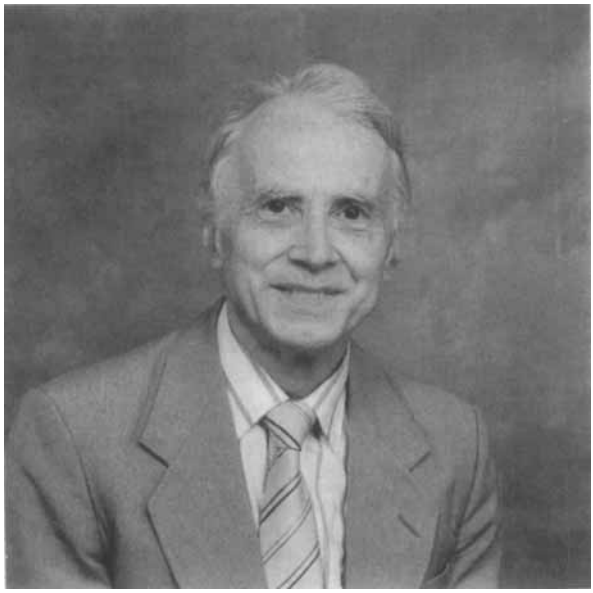
Journal of Liquid Chromatography & Related Technologies
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713597273

Dedication

To cite this Article (1995) 'Dedication', Journal of Liquid Chromatography & Related Technologies, 18: 18, xi — xiv
To link to this Article: DOI: 10.1080/10826079508014608
URL: http://dx.doi.org/10.1080/10826079508014608

JOURNAL OF LIQUID CHROMATOGRAPHY, 18(18&19), xi-xiv (1995)

DEDICATION



Dedicated to Professor Stellan Hjertén

Professor Hjertén was born to Vilhelm and Judith Hjertén on April 2, 1928 at Forshem, Sweden. He received his studentexamen (Gymnasium Diploma) in 1948, a Bachelor of Science in mathematics, physics and chemistry in 1954 and a Master of Science in 1958. In 1965, he married Laila

Woxström; they have one daughter, Maria. After receiving his Masters Degree, he joined the group of Professor Arne Tiselius and received his Ph.D. in biochemistry in 1967. The title of his thesis was "Free Zone Electrophoresis." He was appointed Professor of Biochemistry at Uppsala University in 1969.

Characteristic of Hjertén's way to develop new methods is that he often combines experimental investigations with theoretical studies. As a pupil of Professor Tiselius (who received the Nobel Prize in 1948 for his electrophoretic and chromatographic studies) Hjertén was influenced by Tiselius' great interest in the development of new methods for the separation of bipolymers. He realized the great importance of such research for the progress of biochemistry and related disciplines. Among methods which he has introduced and which are widely used are:

Chromatography on Hydroxyapatite. [Arch. Biochem. Biophys., 65 (1956) 132].

Gel Filtration (Size-Exclusion Chromatography) on Cross-linked Polyacrylamide. (Anal. Biochem. 3 (1962) 109).

Hjertén was the first to observe the molecular-sieving properties of crosslinked dextran gels [for a review, see Electrophoresis, 9 (1988) 3]; later they became available commercially as "Sephadex." It is also of interest to note that separations of proteins were accomplished with polyacrylamide gels before they were accomplished with dextran gels [A. Tiselius, Experientia 17 (1961) 433] and this was done at a time when many (including Tiselius) had doubts whether the slow diffusion of macromolecules into and out of a gel particle would permit separation of molecules as large as proteins.

Gel Filtration (Size-Exclusion Chromatography) on Agarose. (Arch. Biochem. Biophys. 99 (1962) 466).

Electrophoresis and Immunoelectrophoresis in Agarose Gels. (Biochim. Biophys. Acta 53 (1961) 514; 53 (1961) 518).

Electrophoresis in Polyacrylamide Gels.

Two groups in the USA (Raymond and Weintraub; Ornstein and Davis) and Hjertén in Sweden, studied, independently, the usefulness of polyacrylamide gels for analytical electrophoresis of proteins [for a review, see Electrophoresis 9 (1988) 3]. An apparatus for preparative separations was also designed which

permits fractionation of proteins in the range 1 mg - 1 gram with a resolution comparable to that obtained in analytical polyacrylamide gel electrophoresis.

Hydrophobic-interaction chromatography.

Hjertén introduced this term, which now is generally accepted, in connection with synthesis and studies of beds with noncharged, nonpolar ligands [for a review, see Methods of Biochemical Analysis (Ed. D. Glick) John Wiley and Sons, New York 1981, Vol. 27, pp. 89-109].

Capillary Electrophoresis. [Chromatog. Rev. 9 (1967) 122].

In this paper, Hjertén stated that there are two ways to perform electrophoresis in capillaries, one being based on rotation of the horizontal capillary around its long axis, the other on the use of a stationary capillary with a very narrow bore (today, the latter method is called high-performance capillary electrophoresis). Hjertén's work focused on the first method, particularly since, at this time (in 1967), no UV detectors were available which would be sensitive enough to detect zones in a tube with diameters much below 1 mm. In this article Hjertén described the advantages of coated capillaries, the effect of sample solution, the separation of metal ions, nucleotides, nucleosides, purine and pyrimidine bases, proteins, nucleic acids, DNA, viruses, subcellular particles and cells; indirect UV detection and the use of additives to increase the capacity and to create isoelectric spectra. In essence, Hjertén, in his 1967 publication, demonstrated the application of free zone electrophoresis, established its foundation, and predicted the bright future and application of this separation technique.

Hjertén's current main interests are centered around the following projects:

1. Chromatography (HPLC) of macromolecules on compressed beds of beads of agarose and on compressed continuous polymer beds. Both types of beds have the attractive feature that the resolution is independent of, or increases, with an increase in flow rate, which is contradictory to classical chromatographic theory [for a review, see Nature 356 (1992) 810].

2. High-performance capillary electrophoresis (HPCE), particularly of macromolecules.

3. Methods for the purification of hydrophobic membrane proteins in the presence of SDS, followed by renaturation of the proteins - an approach which very much facilitates the separation of proteins which are insoluble in water (Biochim. Biophys. Acta 939 (1988) 476).

4. The utilization of the knowledge and the experiences gained in methodological electrophoretic and chromatographic studies, also in areas other than electrophoresis and chromatography, for instance, for the development of (a) dressings for traumatic injuries; (b) agents against diarrhea; (c) catheters to suppress bacterial adhesion; (d) tooth pastes and mouth washes to prevent bacteria from adsorbing to the teeth; (e) simple methods for the determination of bacteria in urine.

I met Stellan a few years ago and I enjoyed talking and discussing science with him. I was impressed by his knowledge, not only of science, but of other social and human matters. I cherish those moments. I wish Professor Hierten continued success and a long, healthy and happy life.

Haleem J. Issaq, Ph.D.
NCI-Frederick Cancer Research & Development Center
Frederick, Maryland