Cell Separation Science and Technology. [*ACS Symposium series*, No. 464]. Edited by D. S. KOMPALA and P. TODD. Published June 1991 by the American Chemical Society, Washington. No. of pages: 302. Price 1992: $69.95. ISBN: 0-8412-2090-5.

Large populations of separated cells are needed for many applications in biotechnology and biomedicine, including biochemical study, product analysis in nonclonogenic cells, selection of fused cells, isolation of rare cell types for cloning, preparation of pure cells for transplantation, and bioreactor maintenance. Any cell type that has limited or no proliferative capabilities but is needed in pure form must be separated by a technique that provides adequate purity, adequate yield, adequate relationship to cell function and adequate function after separation.

Optical sorting, inertial methods (sedimentation and field-flow fractionation), affinity-based methods (adhesion, extraction, field-flow, and magnetic), and electrophoresis are the four principal modern methods of cell separation. Approximately 99% of all cell separations are performed in a centrifuge as part of a research experiment. Other methods, such as magnetic separation, affinity adsorption (panning), electrophoresis, and single-cell selection, have existed for at least 50 years. However, only recently has the demand for large populations of separated cells in biotechnology and biomedical applications needed the development and application of a wider variety of methods. Biotechnology and biomedicine have now become significant activities in industrial and engineering chemistry. This book covers nearly all the methods now used in the separation of living cells, included in the following chapters:

—separation of living cells;
—high-resolution separation of rare cell types;
—rare-earth chelates as fluorescent markers in cell separation and analysis;
—automated cell separation techniques based on optical trapping;
—separation techniques used to prepare highly purified chromosome populations: sedimentation, centrifugation, and flow sorting;
—separation of cells by sedimentation;
—high-capacity separation of homogeneous cell subpopulations by centrifugal elutriation;
—cell separations using differential sedimentation in inclined settlers;
—separation of cells by field-flow fractionation;
—separation of cells and measurement of surface adhesion forces using a hybrid of field-flow fractionation and adhesion chromatography;
—high-capacity cell separation by affinity selection on synthetic solid-phase matrices;
—factors in cell separation by partitioning in two-polymer aqueous-phase systems;
—population heterogeneity in blood neutrophils fractionated by continuous flow electrophoresis (CFE) and by partitioning in aqueous polymer two-phase systems (PAPS);
—separation of lymphoid cells using combined countercurrent elutriation and continuous flow electrophoresis;
—comparison of methods of preparative cell electrophoresis;
—separation of small-cell lung cancer cells from bone marrow using immunomagnetic beads;
—analytical- and process-scale cell separation with bioreceptor ferrofluids and high-gradient magnetic separation.

This book would be useful for people working in the fields of biochemistry, biology, histology, cell culture, and molecular biology.

Endocrine-dependent Tumors. K.-D. VOIGHT and C. KNABBE, Eds, *Comprehensive Endocrinology series*. Edited by L. MARTINI. Published 1990 by Raven Press, New York. No. of pages: 260. Price as of August 1991: $162.50. ISBN: 0-88167-721-3.

The clinical importance of endocrine-dependent tumors like breast and prostate cancer is very well known because of the high frequency with which they occur and the poor prognosis. It was only in the middle of our century, however, that Charles Huggins published his famous articles on the effect of androgen withdrawal in the growth of human prostatic carcinoma, thus providing the first insights into hormone action. The therapeutic principles derived from these early observations still represent the basis for treatment of hormone-dependent cancer. With the advances of cellular and molecular biology during the last decade, newer and deeper insights have been obtained into how steroids regulate the growth of malignant cells. It can be expected, therefore, that better strategies for prevention, diagnosis, and cure of these diseases will be available before the turn of the millennium. Given this situation, it seems necessary to compile the present knowledge in this field. Consequently, various experts from different countries have reviewed the current state-of-the-art, with particular emphasis on important and promising new developments in epidemiology, basic research, and clinical application in breast, prostate, endometrium, and renal and bladder carcinoma. Shorter contributions concern questions of special scientific and clinical impact. In all chapters, significant attention has been paid to the biology, i.e. the relevance of the data obtained both for tumor growth and patient care.

This book would be useful for clinicians, researchers in biology, molecular biology, and endocrinology, as well as for advanced students.

Hyperlipidaemia in Practice. DAVID GALTON and WILHELM KRONE. Published 1991 by Gower Medical Publishing, Philadelphia. No. of pages: 128. Price at publication: $49.95. ISBN: 0-397-44762-0.

This book describes some of the practical problems that arise when managing patients with lipid disorders, and sets out the theoretical background to the subject. It provides an introduction for those wanting to learn about this complex and often confusing area of clinical medicine. The use of an atlas approach was designed to get away from the intricate terminology that has grown up around the subject and to avoid a text interspersed with long lists of abbreviations. Whenever possible, pictures of clinical cases are presented and diagrams have been made as simple as possible by omitting unnecessary detail.