and Laurence Blendis. The fourth section, simply labeled "Functions," includes contributions on the role of matrix in the architecture of tissues, in the regulation of cell excitability and gap junctions, on matrix-bound growth factors and enzymes, on the inhibition of smooth muscle cell proliferation by heparinlike compounds and the concept of stems cells in the liver. Additionally, adhesion-promoting matrix components of bone marrow, with an emphasis on hemonectin, is discussed. The fifth section, comprising two chapters, begins with an excellent synthesis of mechanisms of hepatic fibrogenesis by Mario Chojkier and concludes with a review on the relationships of matrix, tumor cells and growth factors in the metastatic process.

All in all, this volume will be essential reading for the investigator in the extracellular matrix field. It will also appeal to scientists studying the components of the matrix and their interactions with other proteins and matrix and cellular components. Biologists interested in the role of matrix in highly complex phenomena such as cell communication will find this a useful resource. I would also recommend this book to those clinicians who wish to get a better handle on the expanding universe of knowledge about the biology and importance of the hepatic extracellular matrix in health and disease; one anticipates that the advances in this field will become extraordinarily relevant to the management of liver disease in the future. Drs. Zern and Reid are to be congratulated for this fine effort.

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**Molecular and Cell Biology of Liver Fibrogenesis.** Edited by A.M. Gressner and G. Ramadori, 555 pp. Dordrecht, The Netherlands: Kluwer Academic Publishers, 1992. $185.

Fibrogenesis is a beneficial effect of wound healing. In liver disease, however, fibrogenesis often leads to disability and death. The extent of the harmful effect is determined by the unique cellular architecture of the liver, the prolonged action of the injurious agent, the ability of the liver to generate a number of different extracellular matrix components and the heterogeneous cellular composition of the liver. The topic of this book is therefore of interest to every hepatologist.

The volume summarizes the proceedings of a symposium held in Marburg, Germany, for two days in January 1992 under the auspices of the Falk Foundation. Seventy-three principal authors from 17 countries participated. Leaders in the field and researchers whose investigative efforts were beginning were represented. Predictably, therefore, the contributions vary from authoritative, state-of-the-art summaries to research reports that at times are little more than abstracts. Some of these reports were too brief to be evaluated. The more extensive summaries, however, constitute the permanent contribution of this book and fully justify its publication.

The extracellular matrix is a heterogeneous entity, qualitatively and quantitatively modified in liver injury, and derived from different tissue components including cells such as the Ito cell, pit cell and sinusoidal epithelial cell, which are sometimes difficult to identify under the light microscope. These components interact with each other by means of autocrine, paracrine and endocrine mechanisms. Having been generated, they must also be degraded. These are the major focus of this volume, and each of these is authoritatively, clearly and concisely reviewed. Although the sequential changes of the cascade that results in the accumulation of these extracellular proteins are not yet established, the pieces are being assembled. Every hepatologist should therefore have access to this book. Those who want to dig deeper, particularly those who need better insight into methodological details, will find an ample list of references.

This book appeared within less than 12 months of the symposium. It is well illustrated, and the photomicrographs, almost all in black and white, have reproduced well and demonstrate what they are intended to demonstrate.

Given the objectives of the symposium, the book cannot be faulted. Since the pioneering work of Crystal we have recognized that the exported proteins may be a small portion of the much larger amounts of these proteins that are synthesized intracellularly and degraded rapidly. The control of these processes, intracellular synthesis and distributions between intracellular degradation and export could be a topic of a future symposium.

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