Book Reviews

The Liver Biology and Pathobiology; Edited by I.M. Arias, (ed. in chief), J.L. Boyer, N. Fausto, W.B. Jakoby, D. Schachter and D.A. Shafritz, (ass oc. Eds.); Third Edition, Raven Press; New York, 1994; 1,622 pp. $305.00. ISBN 0-7817-0133-3

With a new edition every sixth year 'this book strives to bridge the widening gap between the amazing advances in basal biology and their application to liver structure, function and disease'. It expands with its subject, now with 7 sections, 84 chapters, and 168 contributing authors.

The sections comprise an introduction, where V.J. Desmet gives a thoughtful overview of the status and problems of organizational principles, followed by 'The Cells', 900 pages, with 19 chapters on hepatocyte organization, including organelle functions, regulation of gene expression, nuclear entry, and endocytosis, 15 chapters on hepatocyte metabolism, from energy metabolism to detoxication and vitamin and metal metabolism, 6 chapters on bile secretion, 2 on sinusoidal cells, and 3 on the extracellular matrix. The section 'Interrelated Cell Functions' in 11 chapters presents signal transduction, the roles of G protein, inositol triphosphate, calcium, insulin, cytokines, eicosanoids, nitrous oxide and growth factors, and the section 'The Organ' discusses structure–flow relations in 3 chapters

In 'Relation of the Liver to Other Organs' the influence of liver function on other tissues as muscle, fat, brain, bone, blood and the endocrine and immune systems is analyzed in 8 chapters, and this aspect is expanded in 10 chapters in the section 'Pathobiologic Analysis of Disease Mechanism' to cholestasis, portal hypertension, liver fibrosis, infection with hepatitis virus, and cellular injury from ethanol, immune mechanisms, and neoplasia inducing chemicals.

The concluding section 'Horizons' selects – as in previous editions – areas with remarkable advances expected to have great impact on hepatology in the future. Chapters from this section in preceding editions have been included as chapters in other sections of following editions, confirming the expectations of the editors In the present edition 7 chapters may be viewed as an analysis of basic problems needed to be resolved to modulate liver function, i.e to find more specific and less invasive alternatives to liver transplantation. It comprises identification of the hepatocyte stem cell, transplantation of hepotocytes, targeting of nucleic acids to nuclei, understanding of cell cycle regulation and apoptosis, immunomodulation, and designing genes for transgenic models.

Clearly the section 'The Cell' is pivotal, as to volume as well as conceptually, with emphasis on progress in molecular and cellular biology.

These disciplines may dominate the exploration of most or all aspects of human biology and pathobiology, but they have been particularly productive to promote understanding how the liver succeeds to perform the multiple tasks required to keep the rest of the organism in good shape, and what goes wrong in liver disease The section described how the cell receives and transduces signals, how they affect transcription of the large number of genes the liver can express (accounting for more than 5000 'liver functions'), the effect of nuclear export, RNA processing with translational control of initiation and prolongation, and protein folding and export or degradation. Part of the knowledge presented is derived from the study of cells other than the hepatocyte, but in spite of that of evident relevance for the liver. In the chapters on metabolism classical biochemistry and physiology maintain their role as key disciplines, but with developments largely supported by molecular biology

Perhaps the most intriguing questions in hepatology, biologically as well as clinically, is how the liver exerts an influence on other organs. As stated in the introduction to that section 'the liver is a window through which one may view much of the functions of the body'. Unfortunately the view through the window still is rather blurred, although progress is reported. This is true also as to the pathobiological mechanisms underlying cholestasis and other processes of clinical interest, discussed on the background of basic science as a valuable supplement to standard textbooks.

Evidently the editors' intention is to carry the reader through increasing levels of organization. Fortunately they do not adhere dogmatically to this plan, but have allowed each author to present findings and interpretations within their own field of expertise. In return they have written stimulating and inspiring articles about their favourite subjects. Thus results in some overlapping and occasionally in differences in points of view. However, repetitions do not exceed what may be required to read each chapter as an entity, and differences of opinion are natural dealing with subjects close to the limit of present knowledge It also follows from this supposed editorial policy that chapters are heterogeneous, both in volume and style. Some authors carefully provide the reader with background knowledge, others go more directly to the subject.

The lay-out of the book is of the highest standard, with good introductions, summaries and tables and figures It is recommended to clinical hepatologists for whom it may be difficult to keep up with the expanding original literature and will 'find in this volume glimpses into the current state and future direction of our discipline and perspectives that lead to better understanding of liver function and disease', but it will enrich any reader prepared to make the effort. It should be obligatory reading for anybody who intends to engage in liver research. Presented by this extensive amount of facts about the liver it may be frustrating – or stimulating, depending on the state of mind – to realize how much needs to be learned before we understand what the liver can accomplish, how and why. The statement of K.S. Zaret "Prospects are bright that in the future we will ameliorate liver dysfunction by intervening in the genetic regulatory pathways that control hepatocyte differentiation" is undoubtedly true, but there is a long way to go. Future editions of this book will, like the present one, help to show the way.

Niels Tygstrup

Cellular Cancer Markers; Edited by C.T. Garrett and S. Sell; The Humana Press; Totowa, 1995; xi + 484 pp. $ 125.00. ISBN 0-896-03210-8

Tumor or cancer markers can simply be defined as molecules which indicate the presence of a malignancy. The application of these molecules to cancer diagnosis and management is presently one of the biggest growth areas in laboratory medicine. Traditional tumor markers (e.g CEA, AFP, and PSA) are assayed in body fluid such as serum. The aim of this book is to give an update on cellular cancer

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SSDI 0014-5793(95)00903-5