BOOK REVIEWS


The Platelet comprises an excellent series of lectures by experts in the basic and clinical platelet field. The fact that it has been derived from a course gives this book a special advantage. The reader is given an overview of the morphology, physiology, and biochemistry of the platelet in a broad, sophisticated but uncomplicated manner. In addition, what is known of the practical aspects of platelets in relation to disease is particularly well done. For example, the section on platelet survival and transfusion is particularly clear, presenting available methodology and its applicability as well as its pitfalls. The practical aspects concerned with blood banking are also very good.

A large part of this book is devoted to platelet disorders. The confused and difficult area of the role of the platelet in thrombosis and atherosclerosis is clearly presented. The discussions of von Willebrand’s disease, ITP, and qualitative platelet disorders, coupled with the description of tests of platelet function and enumeration of blood platelets, give one a very workable approach to platelet disorders.

Hematologists desiring a broad look at the platelet from both a basic and clinical standpoint will find this an important addition to their libraries.

—Louis M. Aledort, M.D.


The science of rheology as it applies to blood has very direct applications to medicine and specifically to hematology, thrombology, and cardiovascular physiology. This text carefully describes the theoretical and clinical applications of blood rheology to virtually every hematologic and cardiovascular disorder. This is noteworthy because the editor’s background is that of paint or colloid chemistry, although the last 10 years have been devoted almost entirely to blood rheology. His purpose in writing was to “bring together information on blood rheology and rheological factors in coagulation and tissue perfusion which would be essential to clinicians and medical workers studying cause of circulatory diseases...,” also as a text for engineers, physical chemists, and rheologists wishing to apply (their) concepts of science to medicine. There is a most comprehensive coverage of the literature on blood rheology, slightly under 1000 articles, the dominant annotations of which arise from the editor’s laboratory. There is frequent note that such work was the first to establish this or that phenomenon. The absence of references to either confirmation or contradiction by other workers in the field tends to detract from the credibility of the presentation, acknowledging that, for medicine, this is a relatively new science. For example, in the chapter on Subphases, “one cannot do any better than quote the original paper by Dintenfass...”!

The larger problem is not the references from one laboratory and its techniques that are not widely used, but rather to the problems of translation of rheological phenomena to clinical medicine.

The clinical audience has the background to understand the unsubstantiated theories and conjectural material which dominate the entire text, but the nonmedical scientist may get a very biased view of the pathophysiology of disease or medicine. There is more to the etiology of thrombosis or diabetes, or arteriosclerosis than rheology itself. In the chapter on ischemic and cardiovascular diseases there are some highly valuable comments on the science of fluidics, while other discussion on atherosclerosis or ischemia can at best be called confusing. One statement presented in a list of arguments that high blood viscosity precedes thrombosis, ischemia, and infarction states that “points 3, 5, and 6 would indicate that it is not the arterial wall change which is the basic factor in infarction and thrombosis,” yet there is nothing in points...
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3, 5, or 6 that would appear to support such a conclusion. There are occasional sparks of light when the editor does apply his broad knowledge of colloid chemistry and engineering to certain reports and it is in this area where he could aid the medical scientist so importantly. Unfortunately, the bulk of reporting is an almost encyclopedic listing of references without appraisal of their merits or what the contribution might mean in a broader sense. These annotations are often used as a basis for conjecture and speculation in a language that suggests it to be established fact.

The list of problems of presentation is a long one but perhaps the most serious technical one concerns the many figures illustrating how some variables such as age or disease affect viscosity, yet no reference is made to the hematocrit which is the most powerful variable of all. Without qualification of hematocrit for each point, the data become unusable.

The last chapter on Rheological Concepts and Instrumentation should be at the beginning of the book, although biorheology is classified into ten divisions; for example, System (R) T-TD thixotropic thixotropic/dilatant, does give reason for not overwhelming the reader in Chapter One. Figure 10.2 in the same chapter shows 24 mini-diagram examples of “typical microrheological systems” using the nomenclature noted. They are a challenge to the most compulsive rheologist.

The book can be recommended as a source book of references for those who have experience in the field of blood rheology. The caveats for all others for whom it is intended are considerable.

—Roe Wells, M.D.


While this book is titled The Polycythemic Disorders, two-thirds of the text is devoted to polycythemia vera and one-third to a short review of erythropoietin physiology and the other polycythemic conditions. The review of erythropoietin is comprehensive, but cursory. It describes the principal facets about the hormone, its site and mode of action, its assay and chemical characteristics, its site of production and its relation to the erythropoietic effects of other hormones, but it does not attempt to cover these subjects in depth. At times, the author appears to have difficulty sorting out principal developments in the field, as in the section on cobalt, where the contribution of Goldwasser, et al., who showed that cobalt stimulates erythropoietin release by the kidney, is almost completely neglected.

The sections on secondary polycythemia, pseudopolycythemia, and benign erythrocytosis offer a quick review of the most frequent causes of secondary polycythemia and the primary features of these conditions. Although the abnormal hemoglobins with increased oxygen affinity are included, no description is given to the mechanism of this effect and 2,3-diphosphoglycerate is not mentioned. Alterations in urinary erythropoietin levels after phlebotomy, which may be helpful in characterizing the mechanism of the polycythemias, also are not covered. Nevertheless, a complete survey of the multiple conditions that are associated with secondary polycythemia is provided.

It is with polycythemia vera that this book is mainly concerned. On this subject, the author provides a comprehensive survey of the clinical features, symptoms and signs, cell kinetics, intracellular biochemistry, epidemiology, treatment and relation to other diseases, especially myelofibrosis and acute leukemia. The text is well-organized and the narrative is succinct and easily followed. The author conveys a thorough knowledge of this condition by the many facts he relates and interrelates. Each aspect of the subject is covered extensively. This part of the book should be very useful in discussing polycythemia vera with medical students and as a reference text (849 references). I believe it will be of use to clinical hematologists and to students and trainees in clinical medicine.

—Sanford B. Krantz, M.D.