

access to factual data and the volume should prove a convenient reference work. A minor criticism relates to the numerous grammatical errors, spelling mistakes and misprints. The book is clearly printed on excellent paper and is well and fully illustrated.

I. HARTMANN-GOLDSTEIN

Haemophilia

Haemophilia. Edited by F. Ala and K. W. E. Denson. (Proceedings of the VII Congress of the World Federation of Haemophilia, Tehran, May 1971.) Pp. xviii+308. (Excerpta Medica: Amsterdam, 1973.) Dfl. 72; \$22.50.

THIS book shows yet again how the elegant (and therefore slow) publication of congress proceedings defeats its own object. The Seventh Congress of the World Federation of Haemophilia was held in Tehran in May 1971, and it has therefore taken two years for the proceedings to appear. During this time there has been much activity in the haemophilia field, particularly on the relation between the antigenic, coagulant and other functional activities of antihæmophilic factor. This work has proved to be of great importance in relation to the pathogenesis of haemophilia and von Willebrand's disease, and a book with this title therefore now looks very bare with such scant reference as it necessarily contains to this aspect of the disease.

The book is divided into seven sections, of which the first, on the regulation of factor VIII synthesis, is probably the most valuable. The short section on genetic variants of coagulation factors is now inevitably somewhat out of date and the heading "pathophysiology of haemostasis" gives a quite erroneous impression of the content of the next four assorted papers. There follows a section on blood transfusion and plasma fractionation, which includes papers on the organization of blood transfusion services and on the Australia antigen as well as the preparation of cryoprecipitate for the treatment of haemophilia, but omits consideration of other methods of fractionation of antihæmophilic factor. The remaining three sections are on orthopaedic, dental and other aspects of the treatment of haemophilia.

There is little of value in this volume which has not been published elsewhere in greater detail, and despite the useful series of short reviews which it contains—notably those by Ingram, Dodds, Denson and Blombäck—it is difficult now to recommend it. Had elegance of production been sacrificed to speedy publication, it might have had more value for coagulationists who were unable to attend the congress.

R. M. HARDISTY

The Numbers Game

Data Analysis in Biochemistry and Biophysics. By M. E. Magar. Pp. xvii+497. (Academic: New York and London, December 1972.) \$24.

REPUTATIONS have been made by casting the equations describing theoretical models into linear form so that interesting parameters can be readily extracted from experimental data. Faced with more complicated theories, most physical biochemists have been reduced to trial and error methods and it is regrettably rare to find adequate attention paid to statistical errors.

The purport of this book is to describe mathematical methods which enable parameters to be extracted from experimental data (with, maybe, the use of computers) using models of any complexity and with the maximum reliability. It is not a manual of methods with easy-to-use recipes; nor is it recommended to experimentalists with no head for mathematics—for Clarendon type and multiple suffixes are liberally sprinkled on its pages.

The book is divided into two parts. In the first theoretical section the mathematical methods are outlined. No doubt with the mathematically naive reader in mind, the sections on matrices, analysis and statistics start from first principles. In these chapters a chatty style helps the reader to an intuitive understanding and the more difficult proofs are left out. Unfortunately the galloping pace makes me doubt whether this naive reader will in fact be led to numeracy by Dr Magar. Nevertheless this section culminates in a useful chapter on function minimization; the topics covered, though all to be found in books on numerical analysis, are not as widely known as they might be to physical biochemists. Thus, beside standard treatments of least squares techniques for linear and non-linear systems, Chebyshev minimization and linear programming are usefully described.

In the second "applied" part of the book, the experimentalist is reassured that all this mathematics is germane to his interests. In a series of chapters on spectroscopic properties of nucleic acids and proteins, kinetics, ligand binding and aggregating systems in the ultracentrifuge and elsewhere, the use of the mathematical techniques is illustrated. There are better and more up to date reviews on all of these topics and little attempt is made to assess the models described or discuss their physical basis. The physical biochemist may find his problem solved in these chapters or a solution may be suggested to him; but he will need a mastery of the first half of the book.

I was dismayed by the large number of misprints or worse and by the fact

that my copy started to fall to pieces sooner than I would have expected for the price.

E. G. RICHARDS

Breaking Ice

Studies in Ice Physics and Ice Engineering. Edited by G. N. Yakovlev. Translated from Russian. Pp. v+192. (Israel Program for Scientific Translations: Jerusalem; John Wiley: Chichester, March 1973.) £7.50.

OBSERVING that this book has an editor, but no authors, one might think that a series of chapters by specialist authorities had been welded into a review covering most aspects of ice physics and ice engineering. Not so. This is Volume 300 of the *Proceedings of the Arctic and Antarctic Scientific Research Institute in Leningrad*, and I think the title, or a subtitle, ought to make that clear. Since Volumes 299 and 301 may, or may not, be translated by the Israel Program it would be helpful to know what organizations in the English-speaking world are consulted in the making of their choice for translation.

The individual research papers which make up this volume are not so diverse, however, as might be found in many a scientific journal: without exception they refer to sea ice, with occasional reference to lake ice and river ice, and the slant is invariably towards icebreaker operations. No physicist should be offended therefore if I suggest that "Ice Physics" in the title is misleading.

One paper describes the laboratory facilities of the Arctic and Antarctic Institute in official-report-style language. There is, however, some scientific discussion of the interesting problem of the factors to be maintained in making scale-model tests of an icebreaker in a laboratory pool.

One is never quite sure about misprints and mistranslations. Were the measurements of ice pressures on page 4 really made in February 1923? Since the translator has transliterated the abbreviations for units (M.T./m² on the same page), should he give us his own guess as to what they really are? In general, the translator uses ponderous literal phrases: "establishment of isothermy", "homothermal", "weight-type forces", "... concrete, the water-impermeability of which was ensured by several layers of hydro-insulation"—perhaps these help preserve the Russian flavour. It was never in any real danger.

This book will be of some interest and use to sea ice specialists, especially those concerned with breaking it. Beyond that, to meteorology, climatology, permafrost, hydrology, or ice physics, I doubt if there is any application.

S. EVANS