changes in chlorpromazine jaundice and that produced by other drugs are described in some detail and the possible relationship to primary biliary cirrhosis is discussed in detail.

The nosological jungle through which we are led by the authors is a dense one, the problems of aetiology are equally obscure, and central to their theme is the realization that 'the mechanism of bile leakage in biliary retention . . . still eludes us'.

There is much work to be done and those who embark on it will be grateful to those guides who have led them so certainly to the starting post and pointed the way. The affection of the authors for that interesting organ, the liver, is obvious and they have illustrated its problems both in text and figures with admirable precision. The style of their writing is succinct and compressed and demands a reader's close attention. But how worthwhile it is to give that close attention.

J. N. P. DAVIES

CARBOHYDRATES OF LIVING TISSUES. By M. Stacey and S. A. Barker. (Pp. xvii + 215. 45s.) London: D. Van Nostrand Co. Ltd. 1962.

This book deals with polysaccharide and oligosaccharide complexes found in the animal and human body and will be of great value to the pathologist interested in the changes occurring in disease in normal tissue carbohydrates. In their introduction the authors emphasize the paucity of knowledge of the constituents of normal human tissues and dream of the day when the chemist will have earned the same privilege as the pathologist in aiding diagnosis.

The first four chapters deal with glycosen, hyaluronic acid, chondroitin, and heparin. The methods of isolation and determination are given for each carbohydrate together with the latest information on their distribution, structure, and chemical properties. At the end of each chapter there is an excellent list of references to the original literature up to and including 1960. The biosynthesis and degradation of the various polymers are described and a very comprehensive account is given of the changes to be found in carbohydrate pattern in various diseases.

The chemistry and biological activities of cows and humans with oligosaccharides are discussed in chapter 6.

The last chapters describe the blood group polysaccharides and mucoproteins of blood, saliva, and sputum. The latest available information on the structure of these substances is given and also the work done to elucidate the functional groups responsible for the specific serological reactions of these important tissue constituents. The chapter on 'Mucoproteins in health and disease' gives much valuable information on the electrophoretic separation of serum proteins and the changes in pattern and in bound carbohydrates to be found in different diseases. The recent methods of physical analysis of these important mucoproteins are described, and, to quote just a few cases, the changes to be found in composition of saliva, cerebrospinal and pleural fluids, and sputum in disease are described in interesting detail.

The final chapter is devoted to the lipocarbohydrates, a group of substances interesting because of abnormalities in their composition found in lipidosis; the more im-

portant members of the group, the gangliosides and cerebroside, are described in detail.

This book covers a vast field of knowledge and collects much valuable information for the first time. It will be of great value both to the biochemist and the pathologist interested in the workings of the human body and in tissue changes occurring during illness.

M. HILTON

LIPOPROTEIN CHEMISTRY IN HEALTH AND DISEASE. By Ronald L. Searcy and Lois M. Bergquist. A monograph in AMERICAN LECTURES IN LIVING CHEMISTRY series. (Pp. xi + 197; 34 figures; 9 tables. \$8.00.) Springfield, Illinois: Charles C. Thomas. 1962.

This monograph must be one of the very first in which the complete lipoprotein complexes rather than their lipid components, such as cholesterol, are discussed in relation to health and disease.

The first half of the book considers lipoproteins from the chemist's viewpoint and includes chapters on methods of analysis, properties, and metabolic changes. In the chapter on methods of analysis the authors have wisely given most space to the methods practicable in smaller laboratories. The second half of the book deals with physiological and medical aspects, including the influence of age, sex and race, as well as the effects of stress and disease, particularly diabetes and atherosclerosis.

The authors have succeeded in making the book intelligible both to biochemists and medical practitioners alike, with no chemical formulae to worry clinical readers. It is up to date, and covers a wide range of lipoprotein chemistry supported by a large number of references. The conclusions drawn are sound, and the work as a whole should lead to a wider understanding of this important and rapidly expanding field of biochemistry and medicine. It can be strongly recommended to both biochemists and clinicians.

W. G. DANGERFIELD

DAS LUPUS ERYTHEMATODES-PHÄNOMEN UND DIE ANTINUKLEÄREN FAKTOREN. By Albrecht Beickert. (Pp. 111; 12 figures; 7 tables. DM. 25.-) Jena: VEB Gustav Fischer Verlag. 1963.

This small book presents a summary of much of the available information on L.E. cells and antinuclear factors. In the first part, L.E. cells and factor are well described and illustrated. The many different methods available are listed and given ratings according to their sensitivity and specificity. In a section on the occurrence of L.E. cells in diseases other than lupus, the author states that these can all be classed as collagen or autoimmune diseases, and that not a single case of L.E. cells in a normal control subject has been reported. The second part of the book deals with antinuclear factors. The many methods of showing these are listed and the results obtained by many authors given. The report by some workers of a high incidence of positives in normal subjects by the fluorescent antibody technique draws attention to the importance of choice of substrate in this test. Smears of buccal mucosa cells and, to a lesser extent, human leucocytes, seem to be particularly unsatisfactory in this respect. Two short chapters on the production and pathogenic significance of antinuclear factors may