

*Histochemistry. Theoretical and Applied* by A. G. EVERSON PEARSE, J. & A. Churchill Ltd., London, 1953, viii and 530 pages, 109 illustrations and 4 coloured plates, 60 s.

Histochemistry in its present transitional stage certainly needs a textbook which fully discusses its theoretical foundations. Such a discussion ought to include above all the optical phenomena encountered in the observation of very small stained objects, and the intricate phenomena of diffusion, permeation, adsorption and occlusion, which are of so overwhelming importance for the evaluation of histochemical findings. Therefore the subtitle: *Theoretical and Applied* provokes expectations which are not quite fulfilled, since the book contains rather little of physical theory. It has been (as stated on the cover) "written by a histologist for histologists", and the claim contained in the word "theoretical" is based mainly on the fact that the chemistry of the various reactions employed is fully and ably discussed.

The first 3 chapters deal with general topics: the History of Histochemistry, the Chemistry of Fixation, the Preparation of Tissues by Freeze-Drying. The chapters 4-16 contain a good and critical account of the various histochemical reactions, arranged according to the nature of cellular components, such as: simple and conjugated proteins, carbohydrates, lipids, pigments etc. It is characteristic of the present state of the field that five of these 13 chapters deal with enzymes. This part forms the real nucleus of the book; it contains a wealth of information and derives its greatest value from the author's wide personal experience. The last chapter deals with polarization, fluorescence, phase and electron microscopy, absorption spectroscopy and autoradiography. This chapter is regrettably short (13 pages), only spectroscopy and autoradiography being considered in any detail, and even there the all-important discussion of the theoretical basis is scarcely adequate.

Throughout the book, the author uses the word histochemistry in a rather restricted sense, namely "as applied to tissue sections". It is also stated that "the type of histochemistry about which this book has been written is essentially qualitative, and many workers have felt that its conversion to a quantitative science would considerably increase its field of usefulness". According to the reviewer's opinion, these are dangerous restrictions since the consideration of quantitative problems not only "increases the field of usefulness" but forms the very backbone of histochemistry. Many riddles concerning the unreliability of the so-called qualitative reactions cannot be solved without knowledge of the quantitative factors which determine, *inter alia*, the fundamental fact whether or not the products of a colour reaction can be seen in the microscope.

The technical details of the methods are given in a sequence of appendices which are intended to form "a complete and, if necessary, autonomous unit". This excellent plan is, however, somewhat frustrated by deficiencies of arrangement and typography (there is, *e.g.*, no index to the 17 appendices, which comprise more than 120 methods). Also the quotation system is cumbersome, the references to the appendices being given at the end of the respective main chapters. This makes it difficult to discover that several references are lacking.

Short reviews must of necessity tend to stress the deficiencies and curtail the praise. Let me therefore emphasize that in spite of these criticisms (and in spite of minor errors which have not been mentioned), the book is valuable and indispensable for any member of the rapidly growing guild of histochemists.

H. HOLTER (Copenhagen)

*A trail of research in sulfur chemistry and metabolism*, VINCENT DU VIGNEAUD, Cornell University Press, Ithaca, N.Y., 1952, pp. XIII + 191, 51 fig., \$ 3.25.

On sait la part considérable que DU VIGNEAUD a prise à l'acquisition de nos connaissances actuelles sur la biochimie du soufre, aussi bien en ce qui concerne le rôle de cet élément comme constituant de molécules biologiquement importantes, comme l'insuline, la biotine, etc., que en ce qui touche son métabolisme chez les animaux supérieurs. C'est l'historique des recherches faites dans ce domaine par DU VIGNEAUD et ses collaborateurs qui constitue la trame du présent ouvrage; celui-ci montre ainsi la logique de l'évolution suivie par le travail de l'auteur, au fur et à mesure que de nouveaux résultats se présentaient à lui. D'une exécution matérielle parfaite, le volume en question comporte les six parties suivantes: I. De l'insuline à l'homocystine, II. La transformation, chez l'animal, de la méthionine et de l'homocystine en cystine; la transsulfuration, III. La transformation de l'homocystine en méthionine; la notion de transméthylation et la biosynthèse des groupes méthyle "labiles", IV. La participation de la choline, de la bétaine et de substances voisines aux processus de transméthylation, V. Le destin des groupes méthyle "biologiquement labiles" et