

Hoppe-Seyler/Thierfelder, Handbuch der Physiologisch- und Pathologisch-chemischen Analyse für Ärzte, Biologen und Chemiker, Zehnte Auflage, herausgegeben von K. LANG UND E. LEHNARTZ, unter Mitarbeit von G. SIEBERT.

Fünfter Band. *Untersuchung der Organe, Körperflüssigkeiten und Ausscheidungen*, bearbeitet von F. BRUNS, H. D. CREMER, W. DIEMAIR, C. DITTMAR, J. FÜHR, W. GEINITZ, K. GEMEINHARDT†, K. HINSBERG, G. SCHMID.

Springer-Verlag, Berlin, Göttingen, Heidelberg, 1953. IX + 938 pages, DM 168,—.

This is the 10th Edition of the well-known "Hoppe-Seyler/Thierfelder", which has served so many generations of physicians and biochemists as a guide in their laboratory work. Obviously this Edition will be published in several big volumes, as the first one that has come from the press bears number V. The 9th Edition, the 3rd one edited by THIERFELDER (in 1924), comprised only one volume of about the same size as the present Vth volume. Hence the increase in size is enormous. This may have been dictated by the overwhelming progress of biochemistry during the last decades. Yet I doubt whether this is the only reason and I wonder whether the book has improved by it.

According to THIERFELDER's Preface to the 7th Edition of 1902, the size had gradually increased since 1858, but always every method included had been carefully controlled by HOPPE-SEYLER. Though it is evident that it was impossible to continue this praiseworthy tradition, under THIERFELDER's direction the book has remained what it had been from its conception, a handbook of laboratory praxis. But now great parts of it, at any rate of the volume reviewed, appear to have degenerated into a treatise of descriptive biochemistry. This applies in particular to the chapters "Untersuchung der Organe" by H. D. CREMER AND J. FÜHR, and "Untersuchung von Tumoren" by C. DITTMAR. In the reviewer's opinion from a methodical point of view the best chapters are those on blood and urine by K. HINSBERG and various collaborators, and that on "Nachweis wichtiger Arzneimittel und Gifte" von K. GEMEINHARDT. No objection can be raised against the composition of W. DIEMAIR's chapter on milk, though it is very short and therefore unavoidably very incomplete; the references to literature of this chapter almost exclusively concern German literature. The same applies to GEMEINHARDT's contribution. The other parts, however, those mentioned included which have lost the features of a handbook of biochemical methods, are conspicuous for their international orientation.

H. G. K. WESTENBRINK (Utrecht)

Standard Methods of Clinical Chemistry, Vol. I. By the American Association of Clinical Chemists. Editor-in-Chief: MIRIAM REINER. Academic Press Inc., New York 1953. xii and 142 pages, 6 figures. \$ 4.50.

As stated by the editorial committee in their preface, this book is the first of a series of "Standard Methods" to be published by the American Association of Clinical Chemists. By issuing a number of small volumes the Association hopes to keep the series up to date, as this way of publishing allows frequent revision of some methods without re-issue of all.

The presentation is modelled on the excellent series of "Organic Syntheses": Certain clinical chemists have been asked to submit the method of their choice—this choice being guided by a consensus of colleagues who regularly use such a method—, it has then been checked in other laboratories and in the final publication all results and comments have been incorporated.

Each method is treated along the following lines: Introduction and/or Principle, Reagents, Procedure, Calculation, Normal Values, Abnormal Values, Discussion or Comments, Precautions and Notes, Literature. (All these items do not necessarily appear in each presentation.) This treatment has the great advantage over the cookery-book type of laboratory manual that it promotes a more critical attitude and a better understanding in those who consult the book.

The requirements of a routine clinical chemical laboratory which often dictate a sacrifice of precision to speed and simplicity are reflected in the choice of techniques: of the 19 methods described in this volume 12 are colorimetric, as against 4 titrimetric and 3 other procedures. Workers who have already chosen their own methods will not necessarily agree in all respects with the selection made here; for instance, the reviewer regrets that the time-honoured micro-Kjeldahl nitrogen determination has had to make place for a biuret method of protein estimation, while the method proposed for urea nitrogen seems to be a bit tricky. But the man who has to set up a new clinical laboratory can safely entrust himself to the directions given in this book, for the drawbacks of some procedures are discussed in a straightforward manner. A choice of "old favourites", e.g. Kramer and Tisdall's calcium determination and the Folin-Wu glucose estimation, is combined with modern methods as flame photometry of sodium and potassium and the Nelson-Somogyi procedure for glucose.

In this volume methods are given for the determination of: amylase, bilirubin, calcium, carbon dioxide (2), chloride, cholesterol, creatinine, glucose (2), lipase, phosphatase, inorganic phosphate, protein-albumin-globulin, prothrombin time, sodium and potassium, thymol turbidity, urea nitrogen and uric acid. The newcomer to the laboratory may profit by the introduction which briefly outlines the rules of "good housekeeping" which a responsible laboratory should observe.

It is the reviewer's belief that this booklet, which promises well for the series, will become a welcome inmate of most clinical chemical laboratories and will also be profitably consulted by many other workers in research institutes and universities whose work requires rapid and reliable determination of biologically important substances. The typographical execution comes up to the high standards that Academic Press has taught us to expect from them.

E. P. STEYN-PARVÉ (Utrecht)

International Review of Cytology, edited by G. H. BOURNE AND J. F. DANIELLI, Vol. II.
Academic Press, New York, 1953, pp. xii and 545, \$ 11.00.

This volume consists of 14 articles on cytochemistry and cell physiology.

In *Quantitative Aspects of Nucleoproteins* H. SWIFT very thoroughly discusses the value of microspectrophotometric methods (visible and U.V.) and suggests some of the means to check their accuracy. Similarly, D. GLICK gives *A critical survey of current approaches in quantitative histo- and cytochemistry* and emphasizes the necessity of combining several microtechniques in order to cross check the results as to quantity and location of cellular components.

The nature and specificity of the Feulgen nuclear reaction is then described in some detail by M. A. LESSLER and an important contribution on *Ascorbic acid and its intracellular localisation, with special reference to plants* is made by J. CHAYEN who succeeds in approaching the problem from a wide angle and discusses, from the cytochemical point of view, the dynamic role of ascorbic acid in such important functions as mitosis, photosynthesis and hydrogen transport.

Two related chapters, one by W. L. DOYLE on *Quantitative histochemistry of phosphatases*, the other by M. CHÈVREMENT AND H. FIRKET on *Alkaline phosphatases of the nucleus* give a detailed survey of the merits of different techniques available and discuss the ways to avoid diffusion artefacts. The second paper gives a survey of the literature on nuclear phosphatases in different physiological conditions.

In a review on *Aspects of Bacteria as cells and organisms* a descriptive account of bacterial morphology is given in a first part by S. MUDD, whilst the still very much controverted cytology of bacterial mitosis is described in a second part by E. DE LAMATER.

Progress of *Electron microscopy in tissue sections* are reviewed by A. J. DALTON who describes the main results ultra thin sectioning has led to and the prospects of such methods for the investigation of the fine structure of cells.

A. F. BARADI AND G. H. BOURNE give a cytochemical description of *Gustatory and olfactory epithelia* and the remarkable inhibitory effects on some enzymes of substances having similar tastes, which offers the basis for an attractive theory of taste and smell.

J. HÄMMERLING in *Nucleo cytoplasmic relations in the development of Acetabularia* discusses the work of BRACHET's and his own school on the properties of a giant alga, whose single nucleus has been eliminated. The non genetical role of the cell nucleus on morphogenesis, regeneration and protein synthesis can thus be studied unambiguously.

In a paper on *Multienzyme sequences in soluble extracts* H. R. MAHLER studies the possibilities of dissecting such complex enzyme system as mitochondria into "particulate non mitochondrial" and "soluble" fractions where each single step of a sequence of enzymic reactions has a possibility of being studied.

Two stimulating chapters are devoted to ion exchange. The first by J. F. SUTCLIFFE (*Ion secretion in Plants*) examines the dependence of ion absorption and transport on respiration and phosphate metabolism and the second by E. J. CONWAY (*A redox pump for the biological performance of osmotic work and its relations to the kinetics of free ion diffusion across membranes*) studies the theoretical aspects of the utilisation of electron transfer from one redox system to another one for its transformation into available energy for biological work.

A final chapter by P. J. GAILLARD on *Growth and differentiation of explanted tissues* describes many patient biometrical measurements on cells and organs cultured under different conditions. It is followed by a Report of the conference of tissue culture workers held in 1950 at Cooperstown (N. Y.).

The book is on the whole extremely well documented and stimulating.

M. ERRERA (Brussels)