

*The Harvey Lectures*, Series XLIX, Academic Press Inc., New York, 1955, 299 pages, price \$ 7.50.

It is always a pleasure to receive a new volume of *The Harvey Lectures*. The lecturers are without exception scientists of the highest reputation, speaking on a subject, the advancement of which owes much to their own contributions. This time the series of lectures is of particular interest for biochemists. No more is necessary to recommend this series warmly than to mention the names of the authors and the subjects treated: C. FROMAGEOT, The metabolism of sulfur and its relations to general metabolism; H. H. WEBER, Adenosine triphosphate and motility of living systems; D. NACHMANSOHN, Metabolism and function of the nerve cell; P. KLEMPERER, The significance of the intermediate substances of the connective tissue in human disease; R. D. HORCHKISS, The genetic chemistry of the pneumococcal transformations; B. CHANCE, Enzymes in action in living cells: The steady state of reduced pyridine nucleotides; A. L. LEHNINGER, Oxidative phosphorylation; L. PAULING, Abnormality of hemoglobin molecules in hereditary hemolytic anemias; J. D. HARDY, Control of heat loss and heat production in physiologic temperature regulation.

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*An Introduction to Paper Electrophoresis and Related Methods* by MICHAEL LEDERER, Elsevier Publishing Co., Amsterdam, 1955, xii + 206 pp., 70 illus., 37 s. 6 d.

Electrophoresis in filter paper strips has rapidly been developed into an extremely useful method. No doubt this advance gained its first stimulus from the triumphs of paper chromatography, with which paper electrophoresis has many advantages in common. In the complicated systems to which these separation procedures can be applied it is very valuable that they are based upon different properties of the substances under investigation. Besides, the advantages of the electrophoretic analysis in the study of proteins are obvious also in the filter paper technique, where chromatographic procedures so far have met with difficulties.

Dr. M. LEDERER, who has himself done valuable work in the field, has now published a very useful monograph on the subject. The paper electrophoresis method is somewhat risky, as it appears simpler than it is. There are many pitfalls and a certain amount of "inside information" has so far been essential to avoid mistakes. In this work Dr. LEDERER has collected important data from a large number of scattered papers and to this he has added comments based upon his own experience and critical judgement. A rather complete collection of various applications to substances of high and low molecular weight forms the major part of the monograph but theory and experimental technique are also dealt with in detail. Various methods for the quantitative determination of the protein components observed on the strips, for example in the analysis of serum, are described. There is still much disagreement between various workers about the degree of accuracy obtainable. The statement that "the value of precise quantitative methods for clinical purposes is still questionable in most cases" (p. 99) may apply to the present situation, but I would not be surprised if in the near future precise determinations of even small changes, e.g. in  $\gamma$ -globulin, were to become of considerable interest.

Paper electrophoresis is related to "column electrophoresis" in very much the same way as paper chromatography to column chromatography. Recent experience in the Uppsala laboratory and elsewhere have shown the usefulness of the column electrophoresis technique and of similar "zone" methods for the separation of larger quantities of material. The advantages are obvious not only for preparative purposes but also because of the greater resolution and better definition. It is therefore satisfying that the author has included also these new zone methods, which offer great promise. Dr. LEDERER's monograph should be very useful to anybody who wishes to become acquainted with the many possibilities of the new forms of electrophoresis methods and needs some advice in technical matters, an understanding of which is essential for successful work in this field.

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