

BOOK REVIEW

Elektroforesa na papíře a v jiných nosičích (Electrophoresis on paper and in other carriers), by ČESTMÍR MICHALEC, JAROSLAV KOŘÍNEK, JAN MUSIL AND JIŘÍ RŮŽIČKA, Nakladatelství Československé akademie věd, Praha, 1959, 315 pages, 98 figs., price Kčs 34.50.

The value of this book lies in the well-balanced contents. It would be difficult to find a technique or a group of substances of some importance that are not included. This is the main respect in which it differs from some books of similar nature and size in which certain aspects of theory, technique or application predominate owing to personal preference of the author. For example, in this book only about 35 pages are devoted to plasma proteins (including a bibliography of selected papers concerning certain groups of diseases), so that it can be considered as being complementary to the more specialized works that deal mainly with plasma proteins, such as those of WUNDERLY, DITTMER and ENSELME AND DREYFUS. In the emphasis that is laid upon applications outside the protein field, this book resembles to a certain extent the earlier introduction by M. LEDERER, but inorganic separations are treated less extensively in the present book.

In the historical introduction, credit is given to KÖNIG for having published the first paper on this subject (1937); this seems to be correct as far as proteins are concerned, but in 1931 a report on inorganic separations by a sort of paper ionophoresis had already been published by DYACHKOVSKIĀ AND ISAENKO (*cf. Chem. Abstr.*, 26 (1932): 48).

The theoretical chapter by RŮŽIČKA (45 pp.) starts from the general principles of electrophoresis (conductivity of solutions, ionic charge, etc.) and proceeds to the main features specific for carrier electrophoresis, such as the effects of stabilizing media (electro-osmosis, tortuosity, "barrier effect", adsorption) and complications due to heating and evaporation. In the concise chapter on the general technique (25 pp.), MICHALEC discusses various types of equipment for low- and high-voltage electrophoresis, selection of paper and electrolytes, application of samples, detection and determination of substances, and some special techniques such as electrorheophoresis, counter-current continuous electrophoresis, two-dimensional separations, and radial electrophoresis.

Due attention is paid to the separation of low-molecular substances (MUSIL, 65 pages). Synthetic drugs are dealt with under a rather loose heading "Substances with biological activity". Eighty-seven pages are devoted to the separation of proteins (MICHALEC) under the title "Electrophoresis of high-molecular substances", although nucleic acids and most polysaccharides were included in the preceding chapter. Veterinary surgeons and experimental biologists would perhaps welcome more

detailed data in the article on animal sera, but it may at least serve as a bibliographic source. The author does not mention that the addition of mercuric chloride to ethanolic bromophenol blue staining solution for proteins is not necessary.

KOŘINEK has contributed a very interesting and stimulating chapter on electrophoresis in other carriers than paper (starch suspensions, starch gel, agar gel, etc.) and on preparative electrophoresis, which includes mainly column electrophoresis and the continuous descending technique (about 50 pp.). An excellent discussion is devoted to immunoelectrophoresis: both the technical details and the biological interpretations are dealt with critically in a very lucid way. The wide acceptance that KOHN's membrane filter electrophoresis has gained, seems to have come too late for it to be included.

In making a choice between alternative procedures, the authors have relied partly on their own experience, and partly on that of other workers. They have always taken pains to remain fair and objective and to avoid making a definite judgment upon questions that have not yet been unambiguously settled. Examples of this attitude may be found in all the chapters. Thus, for example, several methods for the estimation of corrected mobility are presented on equal terms, various modifications of column electrophoresis are described without preference being given to any of them, and none of the various methods of protein staining and quantitative evaluation are favoured, the choice of the procedure and the introduction of more or less individual correction factors for a given procedure being left to the individual worker.

Of the applications, only those that were considered to be of essential value are mentioned; the authors themselves acknowledge that such a choice is open to objections, but they have mostly hit the mark.

Bibliographic lists are given at the end of relatively short sections, the page on which they appear being indicated at the foot of every page, which facilitates their use. The total number of references amounts to about 1300 including some duplications. The literature up to the middle of 1958 has been covered. Subject and author indexes are included. Both printing and binding are excellent and the drawing on the dust-jacket is both technically correct and artistically competent. The price is moderate. Incorrect spelling, such as Draggendorf, Bräummiger or Natrii diethylbarbiturici, is an exception.

The present book is a well-balanced and systematically arranged account of techniques and applications, written in a clear, logical, and didactically competent manner.

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NEW JOURNAL

Zeitschrift für Chemie, published by VEB Deutscher Verlag für Grundstoffindustrie, Leipzig. Vol. 1 begins in 1960, 12 issues per year, price D.M. 3.00 per issue. This new journal contains review articles and short communications.