

The distribution of phenolic compounds in apple and pear trees (A. H. WILLIAMS)

The formation and possible function of phenolic glycosides (J. B. PRIDHAM)

The mobilization of betanin in beetroot (S. P. SPRAGG)

Germination inhibitors in plant material (C. F. VAN SUMERE)

The inhibitory substances contained in sugar beet glomerules (J. DE ROUBAIX ET O. LAZAR).

La seconde partie contient trois articles (de T. SWAIN; F. A. ISHERWOOD; et G. BULOCH) sur les rapports entre leuco-anthocyanines et lignine et sur la formation de lignine.

La troisième partie contient cinq articles (de D. WOODCOCK; A. E. FLOOD ET D. S. KIRKHAM; A. C. HULME ET K. L. EDNEY; R. J. W. BYRDE, A. H. FIELDING ET A. H. WILLIAMS; et C. H. CADMAN) concernant les rapports entre substances phénoliques et résistance à l'infection chez les plantes.

La quatrième partie contient trois articles (de J. B. HARBORNE; R. C. PECKET; et W. J. FEENSTRA), sur des aspects génétiques de la formation de substances phénoliques.

Plusieurs de ces articles contiennent des données sur des méthodes chromatographiques utilisées pour la séparation des substances phénoliques.

Ce livre est très bien présenté, illustré de nombreuses photographies et sera étudié avec profit par tous ceux qui s'intéressent à la biochimie des substances phénoliques des végétaux.

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Protides of the Biological Fluids, Proceedings of the Seventh Colloquium, Bruges, 1959.

Edited by H. PEETERS, published by Elsevier Publ. Co., Amsterdam, 1960, x + 420 pages, price 76 s.

Sint Jans Hospital in Bruges, which is very well known to art enthusiasts because of its collection of paintings by HANS MEMLINK, has in recent years become equally well known among clinical chemists on account of the annual international colloquia on protides (*i.e.* proteins, peptides and amino acids) of the biological fluids, that are organized there.

The previous two volumes of these Proceedings have already been reviewed by MARINI-BETTÒLO in this Journal, Vol. 3 (1959) pp. 98 and 203. In the present volume, 20 papers appear in the form of summaries only, as they have already been published in *Clin. Chim. Acta* or elsewhere. The rest of the volume contains 66 original papers, an introductory review on antibody synthesis by SCHULTZE, and an account of a round table conference under the chairmanship of PEETERS, which deals briefly with a variety of subjects. There were two sections specifically devoted to electro-

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phoresis and chromatography, but other sections are also interspersed with papers concerning these topics. The section on immunoelectrophoresis deals with specific applications to perchloric acid-soluble serum protein (DE VAUX St. CYR), organ proteins (KESSEL), salivary proteins (GABL), and proteins of tears, saliva, milk and labyrinthine fluid as compared with serum (KOHN). Agar immunoelectrophoresis (as well as electrophoresis on paper) was also the method most commonly used in other sections of the Colloquium. By interposing a thin agar layer between an anti-serum-soaked paper and a two-dimensional "star" paper electropherogram of serum, PEETERS AND VUYLSTEKE obtained a kind of immunoelectrophoretic two-dimensional pattern. ORIOL-BOSCH and VOIGT reported on their experiences with KOHN's method of cellulose acetate foil electrophoresis. A preliminary description of an interesting new method of free zone electrophoresis was given by HJERTÉN, in which a horizontal tube rotates on its long axis in order to suppress the disturbing effects of convection.

In the section on chromatography, MEIJERING and HUISMAN showed that normal haemoglobin can be separated into six fractions on CM-cellulose columns, HOLMBERG and WESTLUND investigated fractions obtained on DEAE-cellulose by means of electrophoresis on paper and starch gel, PENARANDA studied amino acids of exudates and transudates, using paper chromatography. Chromatography on cellulosic ion exchangers was described in papers of other sections also. A very sensitive method of measuring the absorption of proteins at $210\text{ m}\mu$ has been adapted for the eluates of DEAE-cellulose columns by TOMBS *et al.*

The section entitled "Biochemistry" includes an article by BODMAN, which is a cross between a brilliant essay and a useful technical account on the electrophoretic investigation of foetal proteins. BIGWOOD poses the question whether any other amino acids besides β -amino-*n*-butyric acid are ninhydrin-negative in solution. BLOEMENDAL and BOSCH employ starch-block electrophoresis and ion-exchange chromatography in the study of "soluble" RNA. Agar-gel electrophoresis has proved to be very efficient for the investigation of haemolymph proteins of several insect species (MISSELIJN *et al.*).

The section on carnitine deals with various facets of the remarkable and comparatively little known biological properties of this betaine. Similar sections dealing with a particular topic, *e.g.* macroglobulins and urinary proteins, are included in the chapter on protein pathology. Further sections were devoted to the binding properties of proteins and general problems of protein nutrition.

The level of the contributions is high and the quality of paper and typography are up to the usual Elsevier standards. The illustrations are well produced as exemplified by the very numerous immunoelectrophoretic patterns. Misprints are not infrequent, but they are compensated for by the promptness of publication and are not disturbing.

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