quantitative aspects of a membrane-carrier transport mechanism. W. Wilbrandt, in a general discussion of the transfer of a wide range of compounds through the epithelial cells of the kidney tubule and intestine, arrives at a membrane-carrier type mechanism the features of which are then illustrated by results on sugar transport in erythrocytes. Montague Maizels and E. J. Harris cover cation transport. The latter states in conclusion, "Results obtained for human red cells indicate that a single mechanism brings about active sodium ion extrusion and active potassium ion accumulation."

Three chapters on microorganisms, by Aser Rothstein, E. F. Gale, and P. Mitchell, include the uptake of sugars by yeast, the accumulation of amino acids and the transfer of phosphate, probably $H_2PO_4^-$, within staphylococcal cells. The extent and selectivity of the amino acid accumulation is especially striking.

H. Lundegardh contributes one of the longer reports in describing his pioneering studies covering many years of work on the ion absorption and transport of root tips, primarily spring wheat. His interpretation in terms of "anion respiration" through the cytochrome system is also described. Three further studies on plants are then presented. J. F. Sutcliffe is concerned with cation absorption by nongrowing beet disks. R. Scott Russell extends Lundegardh's idea of cytochrome oxidase as the energy source for ion accumulation to ascorbic acid oxidase, the principal terminal oxidase in barley roots. Although he concludes that energy for active accumulation of electrolytes may come from this system also, he does not interpret the experimental results in the same terms of "anion respiration." The final paper of this group, by F. C. Steward and F. K. Miller, considers salt accumulation at both the cellular and plant levels of organization. In the first portion, the authors have as their aim the discovery of the relation in growing cells between water and salt accumulation on the one hand and respiration and protein synthesis on the other. Both dividing and nondividing tissues are included.

Hans Ussing reports on his work with frog skin, in which current from the short-circuited skin is equivalent to sodium ion transport. In addition, he finds effects of atropine, TEPP, and so forth, suggesting possible similarities between sodium ion transport in frog skin and the extrusion of sodium ion by nerve. Some of the extremely illuminating work on cation transport in nerves by A. L. Hodgkin and R. D. Keynes is described by them in the succeeding paper.

E. J. Conway presents his "redox-pump" theory of active transport through membranes as well as experimental work on sodium and potassium transport in yeast, sodium ion excretion by, and localization in, skeletal muscle, and the formation of gastric hydrochloric acid. A report by H. Burr Steinbach entitled "The regulation of sodium and potassium in muscle fibers" is followed by three papers in new and old fields that have received relatively little attention. These are a consideration of the exciting properties of mitochondrial preparations by R. E. Davies, (incidentally, the captions under two figures on page 460 have been reversed), the transport of proteins by F. W. R. Brambell and W. A. Hemmings and of lipids by A. C. Frazer. The final paper is a thoughtful analysis of certain morphological and molecular aspects of transport by J. F. Danielli.

The collection of reports illustrates the great advances that have been made experimentally and conceptually in developing the parts of a systematic transport physiology. It also makes readily available for study a wealth of material covering many aspects of this highly significant field. For the reader, it would have been easier if the different authors had given more direct attention to correlating or contrasting their own views with the views of others actually expressed at the conference. Although there were presumably many interesting and informative reactions to the papers of others on the part of the highly qualified persons in attendance, these, except for Danielli's, are not often reflected in the published volume.

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Proceedings of the 1954 Glasgow Conference on Nuclear and Meson Physics. Sponsored by the International Union of Pure and Applied Physics. E. H. Bellamy and R. G. Moorhouse, Eds. Pergamon Press, New York–London, 1955. ix + 352 pp. Illus. + plates. $9.50.

This volume records the papers of the 1954 Glasgow conference, which took place under the auspices of the International Union of Pure and Applied Physics.

The papers, of which there were just over 100, are arranged in eight sections: nuclear forces and nucleon scattering; nuclear data and nuclear models; photodisintegration; beta- and gamma-ray transitions; π-mesons; field theory; high-energy experimental technique; and heavy mesons and hyperons.

The editors state in the preface that most of the discussion, suitably edited, appears after the relevant paper but, for reasons of economy, papers often could not be fully reported. In particular diagrams were heavily cut.

New Books

The Warfare of Democratic Ideals. Francis M. Myers. Antioch Press, Yellow Springs, Ohio, 1956. 261 pp. $3.50.

Traité de Zoologie. Anatomie, Systématique, Biologie. Tome XVII, *Mammifères.* Les Ordres: Anatomie, Éthologie, Systématique. Fascicules I and II. Pierre-P. Grassé, Ed. Masson, Paris, 1955. 2300 pp. Paper, 2 vol., F. 22,000; cloth, 2 vol., F. 23,600.

Electronic Data Processing for Business and Industry. Richard G. Canning. Wiley, New York; Chapman & Hall, London, 1956. 332 pp. $7.

La Prospection de l'Uranium. Manuel pratique à l'usage de tous. Préface du Marcel Roubault. Commissariat à l'Énergie Atomique. Masson, Paris, 1955. 59 pp. F. 450.

Between the Planets. Fletcher G. Watson. Harvard University Press, Cambridge, Mass., rev. ed., 1956. 188 pp. $5.

Poliomyelitis. Papers and discussions presented at the third International Poliomyelitis Conference. International Poliomyelitis Congress. Lippincott, Philadelphia–Montreal, 1955. 567 pp.

Principles of Renal Physiology. Homer W. Smith. Oxford University Press, New York, 1956. 237 pp. $5.

Reduction with Complex Metal Hydrides. Norman G. Gaylord. Interscience, New York–London, 1956. 1046 pp. $15.

Dictionary of Arts and Crafts. John L. Stoutenburgh, Jr. Philosophical Library, New York, 1956. 259 pp. $6.

Champs de Vecteurs et de Tenseurs, Introduction à l'électro-magnétisme. Edmond Bauer. Masson, Paris, 1955. 201 pp.

Logic and Scientific Methods. An introductory course. Herbert L. Searles. Ronald, New York, ed. 2, 1956. 378 pp. $4.25.

Théorie Générale de L'Équation de Mathieu et de Quelques Autres Équations Differentielles de la Mécanique. Robert Campbell. Masson, Paris, 1955. 272 pp. Paper, F. 2400; cloth, F. 2900.

Chimie Physique Nucléaire Appliquée. Jacques Errera. Masson, Paris, 1956. 226 pp. F. 2100.

L'Évolution de la Lithosphere. I, *Pétrogénèse.* Henri Termier and Geneviève Termier. Masson, Paris, 1956. 654 pp. Paper, F. 8000; cloth, F. 8800.

Propagation des Ondes dans les Milieux Périodiques. Léon Brillouin et Maurice Parodi. Masson, Paris; Dunod, Paris, 1956. 347 pp. Paper, F. 4000; cloth, F. 4600.

Electronics. An introduction for the nontechnical reader and student to all aspects of electronics in this modern age of science. A. W. Keen. Philosophical Library, New York, 1956. 256 pp. $7.50.

The Harvey Lectures, 1954–1955. Delivered under the auspices of the Harvey Society of New York. Series L. Academic, New York, 1956. 421 pp. $8.

The Language of Modern Physics. An introduction to the philosophy of science. Ernest H. Hutten. Allen & Unwin, London; Macmillan, New York, 1956. 278 pp. $3.75.

Blur of the Retinal Image. Glenn A. Fry. Ohio State Univ. Press, Columbus, Ohio, 1955. 120 pp.