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## BOOK REVIEWS

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### BIOLOGICAL CHEMISTRY

#### PROTEINS: STRUCTURE AND FUNCTION

ALBERT LIGHT

*Prentice-Hall Inc., New Jersey, 1974, pp. 165, ISBN 0-13-731711-5*

As the author points out, the involvement of proteins in almost all biological processes and the current trend for pursuing biochemical research at the molecular level has made protein chemistry assume increasing importance in many diverse fields of study, from muscular contraction to nerve growth. This monograph, which provides the non-specialist with a simple introduction into protein chemistry techniques, should be very useful not only to advanced students but also to investigators in other fields. Some 70% of the text is devoted to a logical step-by-step account of the procedures required to determine the sequence of a protein, beginning with protein purification and ending with disulphide bond assignment. The approach is a very practical one, designed to give the reader an appraisal of the usefulness of the techniques discussed. Indeed, one feels that sometimes more details could have been given about the theoretical basis of these techniques, for example in dodecylsulfate gel electrophoresis. Nevertheless, through it all comes the impression that the author is clearly an expert in the field. This impression is created not only by the breadth of coverage, which includes slightly exotic but very useful techniques such as affinity chromatography, automated Edman degradation, aminoethylation, maleylation and diagonal electrophoresis but also from the insights into the advantages and limitations of the procedures discussed, which could only have been gleaned from practical experience.

The remainder of the text consists of a very brief introduction summarising the basic principles of protein structure and a concluding chapter on the relationship between protein structure and function from two points of view, enzyme action and molecular evolution. So the title of the book is perhaps a little misleading, since most of it is devoted to *primary* structure only and little space is given to function. But in a book of this size, completeness must be sacrificed for compactness. The judicious choice of references given at the end of each chapter including books, reviews and original articles only partly remedy this. In addition, references are given in the tables and figures, many of which are taken from the original literature, and nicely illustrate the type of results to be expected from a given technique. One minor complaint is that the one letter code is used in only one figure (a comparison of the sequences of the insulins of several species). Since many protein chemists

do not know the one letter code. it would have been better to use the three letter code throughout, especially as the letters B (Asx) and Z (Glx) are not given in the key but appear in the figure.

In conclusion, this book can be wholeheartedly recommended to anyone who wants to appreciate the techniques and problems of protein sequencing but lacks the formal training. It could also usefully serve as supplementary reading for the protein chemistry section of a general biochemistry course.

Jisunon Svasti

## NEUROSCIENCES

### THE NEUROSCIENCES: THIRD STUDY PROGRAM,

F.O. SCHMITT and F.G. WORDEN, EDITORS-IN-CHIEF.

*Published for the Neurosciences Research Program by the MIT Press Cambridge, Massachusetts, 1974, xxvii, pp. 1107, 548 illustration, \$ 19.95.*

*More than two decades have passed since man began to split the atom, cracked the genetic code, and began to explore the outer space. But he has yet to solve the mysteries of memory, learning, and consciousness or manage to understand himself (TIME Magazine, January 14, 1974)*

The human brain is the most mysterious and least-known area of man's universe, not because of its gross or microscopic appearance, but attempts to correlate and understand brain mechanism underlying the control of behavior, from viewpoints of its development, structure and function present the most complex problem to which man ever addresses himself through the use of scientific methods and technology. Furthermore, the discovery of this newest and perhaps last frontier in man's exploration of himself seems to be urgently needed from human viewpoints. Once the basis of brain function in the control of behavior were better understood, significant progress could be made, not only in the alleviation of mental and behavioral ills, but more importantly in the search for the understanding of the nature of man and his behavior. F.O. Schmitt once said "To understand man, we have to understand the brain."

Recently, it also became clear that it would take more than biologists, psychologists and neurologists to unravel the secret of human brain and perhaps physical chemists, theoretical physicists, mathematicians, electronic and computer engineers might also contribute significantly to the progress of the science of the brain. To facilitate the communication among eminent scientists from various disciplines as well as promoting further progress and bring together disparate neural and behavioral sciences in a unified neuroscience an international. interuniversity organization was formed in 1962, sponsored by the Massachusetts Institute of Technology and called the Neuroscience Research Program (NRP).

The volume under review reports the proceeding of the Third Intensive Study Program organized by the NRP which took place in Boulder, Colorado, from July 24 to August 11, 1972. This third volume differs from the previous two volumes (The Neuroscience: a study program 1967; and The Neuroscience: second study program 1970) in several ways. For example, first, instead of containing only review-type articles on basic aspects of neurosciences, the third study program represents especially important and catalytic trends in neuroscience research. The twelve major topics span from functional specialization and interaction of brain hemispheres to feature extraction by neurons, and central processing of sensory information and motor output; from neural and behavioral models in invertebrates to basis of circadian rhythms; from hormonal factors in brain function to biochemical correlates of behavior, molecular machinery of membrane and biochemical regulations in neural tissues, and modulation of synaptic functions; and finally,, to interaction of brain cells and viruses. Second, the main emphasis has shifted from covering each topic as broadly as possible to focusing in depth on a few points of particular significant and promising research progress. Third, each topic in the program was proesented by a team of scientists, half of which were widely recognized experts and the other half from emerging younger scientists selected from a large number of well-qualified nominees. Thus, new ideas and critical approaches were incorporated into the bulk of authoritative viewpoints. Similar to the first two volumes, however, is the excellent organization of information which adequately represents the present standpoints of neuroscience researches as well as identification and formulation of problems for further investigation.

Naiphinich Kotchabhakdi

## PSYCHOLOGY

### GENERAL PSYCHOLOGY

S. CHAN-EM

*Thai Watana Panich, Bangkok, 1974, pp. 158, 35 baht.*

In this book, one of the few scientific monographs written in Thai, basic concepts and principles, methods and measurements used in psychology with some examples have been concisely presented. For an understanding of man's reactions to his environment, physiological concepts in heredity and environment growth and development, integrative functions of the nervous and endocrine systems which can help in interpreting the psychic foundation of the life process are also incorporated.

Most definitions are clear and easy to understand, though in some cases they need more information and examples for clarification. The usage of some biological terms are rather confusing. The writer put all words in Thai and at the same time put the tech-

nical terms in brackets. This is commendable as it will assist the students in learning more technical terms in psychology.

In short, this book contains good basic principles required for the study of psychology.

Usanee Yodyingyud

## **FOOD SCIENCE**

### **FOOD SCIENCE IN DEVELOPING COUNTRIES: A SELECTION OF UNSOLVED PROBLEMS**

E.R. PARISER, ED.

*National Academy of Sciences-National Research Council, Washington, 1974, x, pp. 79.*

Industrialization in developing countries has put more people in the factories and less are left working in the farms. Since an increase in food production is not in keep with population growth, food supplies have been a world-wide concern. This little book describes practical problems of developing countries on various aspects concerning food. The emphasis is placed on four major areas: 1) development of new foods, 2) food processing, 3) food composition and 4) nutrition and health. The book is organized in such a way that it is very easy to read. Each problem is clearly described in a short paragraph, followed by background information section and suggestions of the possible approaches to the solution plus a short statement on a special requirement if such problem is to be attempted. Forty-two problems are listed in the seventy nine pages of the book. There are interesting problems such as use of water hyacinth for feeds, separation of coconut oil and protein by fermentation, and biochemical factors limiting the use of legume grains. Bibliography and key contacts are also included at the end of each problem. This booklet is strongly recommended for those who are interested in food research.

Serene Vimokesant

## **OTHER PUBLICATIONS RECEIVED**

### **WILD FLOWERS OF THAILAND**

TEM SMITINAND

*Aksornbandit Press, Bangkok, 1975, pp. 228, 150 baht (US\$ 20.00)*

This is a publication listing wild flowers of Thailand with botanical description and, in various occasions, other properties ascribed to them either according to common

belief or scientific investigation. Illustrated throughout with colour photographs, the text is given both in Thai and English with the help of eight other contributors. With official position as Expert in Forest Botany, Forest Department, the author is the editor of *Vanasarn*, Thai Forest Bulletin (Botany), the Flora of Thailand, and the Natural History Bulletin of the Siam Society. He has also completed a number of other literary works.

## THAI ABSTRACTS, SERIES A, SCIENCE AND TECHNOLOGY

### THAI NATIONAL DOCUMENTATION CENTRE

*Applied Scientific Research Corporation of Thailand Press, Bangkok, 1974.*

Started in 1974, the Science and Technology Series of Thai Abstracts offer readers with abstracts of work deemed relevant to Thailand, done mainly by Thai researchers. The third issue dated January 1975, has just been released and together with the first two issues brings to a total 761 abstracts of work divided into some 15 major areas. Research works up to 1968 have been documented in this series. Most publications from which the abstracts were drawn are of Thai origin, and hence the series should be a convenient reference source for workers outside as well as inside this country who would otherwise have difficulty in following local research progress.