

and cholesterol, with particular reference to dietary modification. Following this is a section that is concerned with the uptake and release of fatty acids by adipocytes. The mechanisms of action of lipoprotein lipase and the hormone-sensitive lipase are discussed. It is the balance between the activities of these two enzymes that helps to regulate adipose-tissue mass. This is discussed in relation to cell size or changes in the dietary or hormonal status of animals.

This theme of hormone, genetic or dietary modification is continued with the discussion of adipose-tissue cellularity and metabolism. This section is concerned with the generation of new adipocytes in adult animals, and also with the development of adipose-tissue hyperplasia and hypertrophy at different stages in an animal's growth.

The section on adipose-tissue mass and obesity concerns itself with problems such as differences in metabolism between lean and obese animals, meal frequencies, hormonal status, adipose-cell size and the epidemiology of obesity. The definition and description of obesity is discussed in relation to determining lean body mass or assessing the extent of fat tissue by measuring skin-fold thicknesses. Further consideration is given in this section to the effects of exercise or hormonal status on body composition. The final section deals with the relationship between blood lipids and the extent of the adipose-tissue mass and problems related to obesity.

The papers presented in the book are generally accompanied by an extensive list of references, and the index is fairly comprehensive. The book is especially suited to research workers and should interest those who concern themselves with problems related to obesity, diabetes and hyperlipidaemia. It should have a wide readership, including nutritionalists, physiologists, morphologists, endocrinologists and clinicians, in addition to the biochemists who wish to take a wider view of intermediary metabolism.

D. N. BRINDLEY

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### **International Encyclopedia of Pharmacology and Therapeutics, Volumes I and II: Comparative Pharmacology**

M. J. MICHELSON (Editor)

*Pergamon Press, Oxford, 1973, pp. 938, £22.50*

These two volumes of Comparative Pharmacology form part of an extended series entitled 'International Encyclopedia of Pharmacology and Therapeutics'. The first volume contains an introduction to comparative pharmacology by Professor Michelson, who has edited both volumes. Further introductory remarks on comparative pharmacology are provided by Professor Bacq and Professor Florin. Professor Michelson explains the place of comparative pharmacology in general pharmacology, together with a brief review on evolutionary pharmacology which he extends in a section of the chapter on acetylcholine. The first volume contains chapters on acetylcholine and catecholamines, and the second volume deals with a wider range of topics including 5-hydroxytryptamine, amino acids as transmitter substances, the effects of hormones on poikilothermic vertebrates and invertebrates, the distribution and excretion of water and electrolytes, and comparative aspects of absorption, distribution, metabolism and excretion of drugs.

The occurrence and pharmacology of acetylcholine in all the major phyla is extensively reviewed, together with sections on cholinesterases. For anyone interested in any aspect of comparative cholinergic pharmacology the first volume is essential reading and provides an excellent comprehensive and up-to-date summary of the literature to 1970, with some additional references in the addenda added to some of the sections. The chapter on catecholamines reviews the major and minor pathways for the biosynthesis and degradation of catecholamines. The occurrence of catecholamines in invertebrates is only briefly considered, which is in contrast with the section on acetylcholine. However, the distribution of catecholamines in vertebrates is fully documented. The main literature survey is

up to 1968–69 with an addendum of some work in 1970–71. Recent advances in our knowledge on comparative catecholamine pharmacology are therefore not included in this review.

The possible physiological role for 5-hydroxytryptamine in a wide range of invertebrates and vertebrate peripheral systems is reviewed by Professor Florey. But no mention is made of the value of fluorescence microscopy in elucidating the role of 5-hydroxytryptamine and no evidence is considered for its role in the vertebrate central nervous system. The literature is reviewed up to 1968, which possibly explains this omission. The role for various amino acids as putative transmitters in the nervous system is also reviewed by Professor Florey. Approximately half the review is devoted to the arthropods and the author concludes that the evidence for  $\gamma$ -aminobutyric acid as an inhibitory transmitter in this phylum is clear.

A chapter is devoted to the action of a number of neuropharmacological drugs on embryos before the onset of organogenesis, and it is concluded that a number of physiologically active biogenic amines may be involved in the control of the processes of early embryogenesis. In another chapter the action of hormones on poikilothermic vertebrates is fully documented. The size of this section reflects the considerable advancement in this subject over the past 20 years. The effect of neurohypophysial hormones on homoeothermic animals as well as poikilotherms is reviewed. A general review of the effects of hormones in invertebrates is provided by Professor Gersch, who concludes that current evidence suggests that many processes in invertebrates are controlled by hormones. However, the chemical identification of many of these hormones is still required, together with their mechanism of action. The final two chapters are concerned with comparative aspects of absorption, distribution, metabolism and excretion of drugs and the physiological basis of selective toxicity. Both chapters are largely concerned with vertebrates.

These two volumes demonstrate the wealth of potential experimental material in the animal kingdom for a biochemist brought up on mammalian or avian muscle and liver and show the great potential for studies in the field of comparative biochemistry. In this respect it is perhaps a less serious fault that the literature surveys of some of the chapters are rather out of date.

R. J. WALKER

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**IARC Scientific Publications No. 7: Host–Environment Interactions in the Etiology of Cancer in Man (FIC Proceedings No. 18 held in Yugoslavia, 1972)**

R. DOLL and I. VODOPIJA (Editors)

(Technical Editor for IARC: W. Davis, International Agency for Research on Cancer, 1973)

*World Health Organisation, Geneva, 1974, pp. 464, Sw.Fr. 100*

This publication reports the proceedings of an international meeting in Yugoslavia which included contributions by experts in clinical epidemiology biostatistics, oncology and immunopathology, and biochemistry. The scientific papers were grouped in four sessions on epidemiology, endocrinology, metabolic aspects of host–environmental relationships and immunology and virology; they were then summarized and assessed by the sessional chairmen in a separate section at the end of the meeting.

In total, there are 52 substantial contributions from an international and multi-disciplinary team of experts. The content and layout of the papers varies from reviews of recently published work to the presentation and discussion of the author's own work. In the first section there are ten papers on the epidemiological approach to the study of cancer. They include discussions on basic principles and methods together with studies on the variations in cancer incidence that they have revealed in different geographical

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