

be exceedingly difficult for a student, reading through a chapter, to determine just what is a subtopic under what.

A second problem relates to the bibliography found at the end of each chapter. The authors have elected not to interrupt the flow of the narrative with authors' names or numerical references, and this is commendable. However, the references (over two hundred for some chapters) are found at the end of each chapter, *arranged alphabetically*, without regard to subject reference; this makes the use of the bibliography at best a chore, and in all cases discouraging.

Finally, a number of errors occur throughout the book. Some are the usual typographical mistakes, others undoubtedly oversights. For example, the description of the function of the muscle spindle in relation to the gamma system is reversed; more seriously, a description of how to apply neck traction states that, "The patient should be prone with the head elevated about 20 degrees above the feet and the back straight". Other statements contained in the book are controversial or have been shown to be otherwise; thus, the view that 50% of patients with optic neuritis eventually develop multiple sclerosis is no longer justifiable, as is the concept that benign fasciculations are rare.

Over-all, *Medical neurology* by Gilroy and Meyer is a handsomely printed major new textbook of neurology whose price (\$ 16.00) is not excessive. It will serve a useful role, taking its place beside the many other neurological texts as an easily read reference on specific disease entities for students and practitioners alike. It may be anticipated that the shortcomings of organization, bibliography and accuracy, inevitable in a first edition of a text, may be ironed out in future editions.

DAVID A. DRACHMAN
Northwestern University Medical Center,
Chicago, Ill. 60611 (U.S.A.)

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Amphetamines and related compounds. — E. Costa and S. Garattini (Editors.) (Raven Press, New York, 1970, 962 p. \$28.50).

Although a great deal has been written on the complex pharmacology of the amphetamines, this book is still a welcome addition for it summarizes much of our current knowledge, particularly from a biochemical point of view. Any offering of 59 chapters, written by 122 investigators and served in the enthusiastic style of Costa and Garattini will have to be thoroughly digested by pharmacologists. However, it may provide some indigestion to the non-expert in this field for the individual chapters are written by experts communicating with each other.

The book is subdivided into 8 sections with 3 to 11 separate chapters by the participants of a symposium held in Milan at the Mario Negri Institute in 1969. The first section deals with the structure activity relationships of the amphe-

tamines and begins with a presentation by Biel. The subsequent papers deal with the newer halogenated derivatives including two new norexigenic agents, chlorphentermine and fenfluramine that differ markedly in many important respects from amphetamine.

The second section is concerned with the distribution and metabolism of amphetamines in various animals and man. Beckett and Brookes indicate that lipophilic and hydrophilic substitutions on the amphetamine molecule markedly alter drug distribution, excretion and biotransformation. Urinary pH markedly affects amphetamine excretion. Such fluctuations can be minimized by acidifying the urine. A scholarly presentation of the kinetics of amphetamine metabolism and excretion by Vree and van Rossum will delight the mathematically inclined investigator.

The third section involves the interaction of amphetamines with the biogenic amines and brings the heavyweights in this field together including Axelrod, Brodie, Carlsson, Costa, Glowinski, Pletscher, Sulser and their colleagues. These investigators represent the B.B. Brodie school of present and former colleagues which emphasizes the view that amphetamine acts through release of catecholamines and the accumulation of its metabolite *p*-hydroxynorephedrine in the brain. Fuxe and Pepeu and colleagues fill out the program discussing the histochemical aspects and the release of acetylcholine by amphetamine.

Section 4 involves the behavioral and physiological interactions of the amphetamines with biogenic amines and includes reports by Moore, Rech, Welch, Anden, Stein, Ladisich, Cahn and their colleagues. It is in this section that a more thorough presentation of the EEG and electrophysiological aspects of amphetamine pharmacology belongs. Although the work of Cahn and Herold is a step in this direction, much of the known electrophysiological literature is neglected. This oversight, whether deliberate or not, will cause the book to be a disappointment to the electrophysiologically oriented scientist.

Sections 5 and 6 cover the cardiovascular, anorexigenic and metabolic aspects of the amphetamines with emphasis on the pharmacology of fenfluramine as an anti-appetite drug.

Sections 7 and 8 cover the experimental and clinical aspects of amphetamine pharmacology in considerable detail and include its effects on learning and memory, self-stimulation and in large doses for inducing model paranoid psychotic states.

Besides a weakness in covering the electrophysiological aspects of amphetamine pharmacology, operant behavioral aspects although discussed also seem less adequate than they could be. But after all the symposium organizers had a limited amount of time and money and in view of their own special interests did an admirable job of covering the complex pharmacology of the amphetamines. Society is all the richer for their efforts. The book is recommended for every medical and pharmaceutical library and for the experts in this field.

EDWARD F. DOMINO
University of Michigan,
Ann Arbor, Mich. 48104 (U.S.A.)

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