Table I—Parameter Ratios Used to Calculate C_1 Values of Model II and k_I Values and their Ratios Obtained by Fitting the C_1,t Values to Model I[a]

Set No.	$V_1/V_2 = K_{-1}/K_1$	K_1/K_2	k_I when $k_{II} = 0.5$	k_I when $k_{II} = 2.0$	Ratio of k_I's
1	8	0.1	0.529	2.07	3.91
2	8	1.0	0.569	2.31	4.06
3	8	2.0	0.543	2.24	4.13
4	8	10.	0.510	2.06	4.04
5	8	100.	0.501	2.005	4.00
6	2	0.1	0.513	2.03	3.96
7	2	1.0	0.763	2.78	3.64
8	2	2.0	0.806	3.19	3.96
9	2	10.	0.609	2.80	4.60
10	2	100.	0.510	2.06	4.04
11	1	0.1	0.507	2.02	3.98
12	1	1.0	0.790	2.71	3.43
13	1	2.0	1.005	3.56	3.54
14	1	10.	0.840	4.43	5.27
15	1	100.	0.530	2.21	4.17
					Av. 4.05

For Model II, $K_2 = 0.15$, $D = 1{,}000{,}000$, and $V_1 = 5000$ for each set. Note that the ratio of k_{II} values is 4.0. A typographical error in Table II of *Reference 1* gave $K_2 = 0.015$ instead of the actual $K_2 = 0.15$.

1 but not with Eq. 2, even though other data, obtained following intravenous administration, provide strong evidence for Model II or a more complicated model. If he wishes to correlate the apparent "absorption rate constants" derived from application of Model I and Eq. 1, he may be reasonably safe if he utilizes the ratios of the "absorption rate constants" and correlates these with ratios of rates of dissolution or times to dissolve a given percentage of drug derived from an *in vitro* test. I have been quite successful in doing this and will report the details in a future publication.

(1) J. G. Wagner and C. M. Metzler, *J. Pharm. Sci.*, **58**, 87(1969).

JOHN G. WAGNER
College of Pharmacy and Pharmacy Service
University Hospital
University of Michigan
Ann Arbor, MI 48104

Received October 30, 1969.
Accepted for publication March 23, 1970.

BOOKS

REVIEWS

Human Ecology and Public Health. 4th Edition. Edited by EDWIN D. KILBOURNE and WILSON G. SMILLIE. Macmillan, New York, N. Y., 1969. xii + 462 pp. 18 × 26 cm. Price $11.95.

Fairly priced, handsomely printed, sympathetically edited, well illustrated (49 tables; 75 figures), and eminently readable, *Human Ecology and Public Health* is a useful reference for pharmaceutical scientists.

This fourth edition of a work previously entitled *Preventive Medicine and Public Health* relates public health principles to the broader concepts of human ecology. The book is divided into three main divisions—Human Ecology and Human Disease, Public Health Problems and Practice, and the Administration of Health Services; the divisions are subdivided into fifteen chapters. The contributing authors' credentials are excellent; their efforts match their credentials. The references at the conclusion of the chapters are quite comprehensive.

The senior editor describes ecology as an "in" word, and admits to using it with some trepidation. Some examples out of context bear out this concern—on page 85, we learn that "nuclear energy has been harnessed to provide electrical power without polluting the air or depleting natural resources," while on page 90 we are told that the introduction of nuclear reaction power plants has expanded the need for water cooling, "further aggravating the problem" of thermal pollution that alters the life support process of our lakes and streams. We learn of the problems caused by the introduction of synthetic hydrocarbon detergents and are told that the problem was remedied by newly developed biodegradables. No discussion follows about the potential of overloading of surface waters with phosphates, thus upsetting another ecological balance.

Despite these brief lapses from a balanced presentation of bioecology, the book has great merit. Major problem areas—the population explosion, pollution, automobile accidents, and inner-city tensions—are treated with great objectivity. One almost wishes for a touch of the urgent tones of a Commoner (see his *Science and Survival*, for example) when the specific problem of pesticides is considered in Chapter 4, although the purpose of this work does not call on urgency as a teaching device.

Of special note for pharmaceutical scientists are Chapters 2, 3, and 10 which deal, respectively, with Genetic Determinants of Health and Disease; Genetic Interactions of Man and Microbes; and Approaches to the Control of Human Infection. The first two chapters in the division—The Administration of Health Services—are an excellent introduction for the first-time reader and are a

fine reference source for the more experienced student of public health management.

Considering the individual and society generally, the state of our ecologic environment, and our artificial environment and the interrelationships of each and all of these to disease, the book is eminently successful and well worth study by the pharmaceutical scientist concerned with human ecology and public health.

Reviewed by William L. Blockstein
Health Sciences Unit
University Extension
University of Wisconsin
Madison, WI 53706 ■

New Dimensions in Legal and Ethical Concepts for Human Research Vol. 169, art. 2. Consulting Editor, IRVING LADIMER, New York Academy of Sciences, 2 East 63rd St., New York, NY 10021, 1970. pp. 297–593. 15 × 23 cm. Price $23.00.

The papers in this volume are drawn from a conference of the same name held by the New York Academy of Sciences from May 19 to 21, 1969.

The conference was divided into six sections each of which included the presentation of papers and panel discussions. The sections included were Ethical and Legal Base Lines for Professions and Community; Special Problems of Medical Disciplines; Special Problems of Related Professions; Experience in Design, Conduct, and Evaluation of Research; Professional Controls—Internal and External; and Social Responsibility through Communication.

This conference on "New Dimensions in Legal and Ethical Concepts for Human Research" was convened to enable representatives of major disciplines, mainly medical and legal fields, to present their experience and recommendations for meeting current and anticipated problems of experimentation on and with human beings.

These topics have relevancy to the recent activity in the areas of organ and tissue transplants. Work in these areas suggests that technology can surmount virtually all impediments, but this capacity may have to be curbed by social, ethical, legal, and religious strictures in order to achieve professional and community support.

Of particular interest to the pharmaceutical scientist are the papers on "Control and Surveillance of Investigational Drugs" by Herbert S. Carlin and Ronald T. Turnbull, "Conducting Investigational Drug Studies for Industry" by Kenneth G. Kohlstaedt, and "Drug Evaluation Problems in Academic and Other Contexts" by Louis Lasagna.

Staff Review ■

Parenteral Dosage Forms. By CAROLYN G. HALL and KENNETH E. AVIS. Parenteral Drug Association, Inc., Philadelphia, PA 19107, 1969. vi + 262 pp. 22 × 28 cm. Price $7.50.

This comprehensive annotated bibliography of the literature pertaining to parenteral dosage forms has been prepared by Mrs. Carolyn G. Hall and Dr. Kenneth E. Avis, Department of Pharmaceutics, University of Tennessee, College of Pharmacy.

It covers the period 1959 to 1963 and contains approximately 950 entries. The book is arranged topically with a complete author index. The period just prior to the inception of *International Pharmaceutical Abstracts* was chosen for the first of what is anticipated will be a series of bibliographies because the authors' felt that no coverage of this important period was available.

Staff Review ■

Clinical Pharmacy Handbook. By HUGH F. KABAT. Lea and Febiger, Washington Square, Philadelphia, PA 19106, 1969. v + 108 pp. + 70 workbook style tear-out pp. 21.5 × 27.5 cm. Price $6.50 paperbound.

Portions of this volume were originally presented as course material to the senior students at the University of Minnesota College of Pharmacy. The first three chapters deal with course objectives, a course introduction, and notes on the pharmacist–patient relationship as viewed by the author. Some later chapters involve a collection of common hospital abbreviations and meanings, drug interaction tables, a list of sources of drug information, and a workbook section that affords the pharmacy student the opportunity to investigate the physical, chemical, and pharmacologic properties of any drug by means of charts that must be completed and questions that must be answered and referenced. Approximately one-half of the book is devoted to forms concerning general patient information, the clinical status of the patient, patient progress, and laboratory results. These forms are to be filled in by the pharmacy student as soon as the appropriate information becomes available.

The author indicates in the preface that this text is intended for use by students and for "any pharmacist venturing into the clinical setting." Those others not initiated into a clinically oriented pharmacy practice may find this book to be of some value because some important aspects of clinical pharmacy are presented. For example, the drug interaction tables and the chart on drug-induced modifications of laboratory tests are valuable pieces of literature and the collection of common hospital abbreviations and meanings is a step in dispelling the "language barrier" that, at first, exists between the medical staff and the new pharmacist practitioner.

Those educators thinking of initiating a clinical pharmacy course may also find this book of value because it does offer some basic "patient following" forms that were adapted from forms now in use at other hospitals with a clinical pharmacy service. The book also presents some basic philosophy on the pharmacist–patient relationship and some basic operating rules for the student and clinical instructor while in a patient-care area.

Any pharmacist or pharmacy student who has had any exposure to a clinically oriented pharmacy practice will find this book extremely fundamental and perhaps too course-oriented to be of any great value. The material in the book, for the most part, has already been published in one journal or another. The author has simply compiled such pieces of literature as Dr. Edward Hartshorn's drug interaction tables as they appeared in *Drug Intelligence* and the tables on the drug-induced modifications of laboratory values as they were published in the *American Journal of Hospital Pharmacy*. Any pharmacist entertaining thoughts of a clinical practice should already have well in hand the material that is presented in this book.

Reviewed by Richard de Leon
School of Pharmacy
University of California
San Francisco, CA 94122 ■

Biologically Active Amines Found in Man. By FRANZ FRANZEN and KURT EYSELL. Pergamon Press, Maxwell House, Fairview Parks, Elmsford, NY 10523, 1969. vii + 244 pp. 23 × 16 cm. Price $13.50.

As stated by the authors, there has not been an extensive survey of the field of "biogenic amines" since 1951, although during this time there has been a considerable expansion of our knowledge of these compounds.

In 128 pages of text, the authors, who are apparently clinicians, discuss numerous aspects of these amines derived from decarboxylation of alpha amino acids. In separate chapters the biochemistry, pharmacology, and pathophysiological significance of biologically active amines are discussed. This *Handbuch* is unique as a comprehensive survey of this subject as related to clinical medicine. The