

ratio of the corresponding *b* values. These ratios are 7.7 and 4.4 for the cascade barrier bed and USP methods, respectively. If a uniform size distribution for each powder fraction is assumed, the finer powder should have approximately four times the specific surface area of the coarse powder. Thus, the initial dissolution rate per unit surface area of the fine powder is nearly twice that of the coarse powder for the cascade barrier bed method and is comparable to the coarse powder for the USP method. These observations conform to expectations based on apparatus design and fluid mechanical theory.

Figure 2 shows the cascade barrier bed dissolution behavior of a mixture of 5 mg each of the fine and coarse sulfadiazine powders. For comparison, results of separate cascade barrier bed runs of 5 mg of the individual powder grades were added and the sum was plotted. The two plots closely correspond and indicate independent dissolution behavior of the two powder fractions within the bed.

These findings do not indicate the superiority of one *in vitro* dissolution apparatus over another. Instead, they

suggest that, where particle-size effects prevent useful correlations with *in vivo* drug levels, parallel use of two such contrasting methods is necessary.

- (1) "The United States Pharmacopeia," 19th rev., Mack Publishing Co., Easton, Pa., 1975, p. 651.
- (2) "Fourth Supplement to USP XIX and NF XIV," The United States Pharmacopeial Convention, Rockville, Md., 1978, pp. 194, 195.
- (3) A. C. Shah, C. B. Peot, and J. F. Ochs, *J. Pharm. Sci.*, **62**, 671 (1973).
- (4) F. Langenbucher, *ibid.*, **58**, 1265 (1969).
- (5) J. E. Tingstad and S. Riegelman, *ibid.*, **59**, 692 (1970).
- (6) W.-H. Li and S.-H. Lam, "Principles of Fluid Mechanics," Addison-Wesley, Reading, Mass., 1964, p. 18.

Edward G. Rippie *
Abu S. M. S. Huq

Department of Pharmaceutics
College of Pharmacy
University of Minnesota
Minneapolis, MN 55455

Received January 8, 1979.

Accepted for publication April 20, 1979.

BOOKS

REVIEWS

Analytical Profiles of Drug Substances, Volume 7. Edited by KLAUS FLOREY. Academic, 111 Fifth Ave., New York, NY 10003. 1978. ix + 504 pp. 15 × 23 cm.

Volume 7 of this series includes individual drug monographs dealing with supplementary information that is not listed in the official compendia. The entire series of volumes was undertaken as a cooperative venture by the Pharmaceutical Analysis and Control Section, Academy of Pharmaceutical Sciences. The profiles of drug substances in each volume are submitted by contributors and checked by selected reviewers. A typical profile includes such topics as a description of the compound (name, formula, molecular weight, color, odor, and salts), physical properties (IR, NMR, UV, and mass spectra, melting or boiling point, solubility, partition coefficient, and dissociation constant), syntheses, stability, analysis methods, and metabolism and pharmacokinetic data.

The monographs include up-to-date references, and many contributors state that their references are complete through a certain year, a worthwhile piece of information for the reader. Among the drugs covered in Volume 7 are allopurinol, amoxicillin, chlorpheniramine maleate, dihydroergotamine methanesulfonate, diphenoxylate hydrochloride, droperidol, epinephrine, ethambutol hydrochloride, fluoxymesterone, hexetidine, hydroflumethiazide, hydroxyzine dihydrochloride, 6-mercaptopurine, phenobarbital, sulfamethazine, thiostrepton, trimethoprim, and tubocurarine chloride.

The entire series should be included in school of pharmacy library reading rooms and in university science libraries. They contain important drug data that have not been available previously in one single reference source. The series is not meant to be used as a textbook but can be employed effectively as reference material for any pharmaceutical or medicinal chemistry course.

Reviewed by James T. Stewart
School of Pharmacy
University of Georgia
Athens, GA 30602

NOTICES

Acta Facultatis Pharmaceuticae. Universitatis Comenianae. XXX. 1977. 221 pp. 17 × 24 cm.

Advances in Modern Toxicology. Vol. 1. New Concepts in Safety Evaluation, Part 2. Edited by MYRON A. MEHLMAN, RAYMOND E. SHAPIRO, and HERBERT BLUEMENTHAL. Wiley, One Wiley Drive, Somerset, NJ 08873. 1979. 191 pp. 14 × 23 cm.

The Aqueous Cytoplasm. Contemporary Bio-physics Series, Vol. 1. Edited by ALEC D. KEITH. Dekker, 270 Madison Ave., New York, NY 10016. 1979. 230 pp. 14 × 23 cm. Price \$27.50.

Clinical Laboratory Statistics. 2nd Ed. By ROY N. BARNETT. Little, Brown, 34 Beacon St., Boston, MA 02106. 1978. 237 pp. 15 × 23 cm.

Comparative Endocrinology of Prolactin. By D. M. ENSOR. Wiley, 605 Third Ave., New York, NY 10016. 1978. 309 pp. 15 × 23 cm. Price \$45.00.

Drugs and the Special Child. Edited by MICHAEL JAY COHEN. Wiley, One Wiley Drive, Somerset, NJ 08873. 1979. 258 pp. 15 × 23 cm. Price \$18.95.

Environmental Health Criteria 5: Nitrates, Nitrites, and N-Nitroso Compounds. Published under the joint sponsorship of the United Nations Environment Programme and the World Health Organization, Geneva, Switzerland. 1978. 207 pp. 13 × 21 cm. Price \$5.00.

Evaluation and Optimization of Laboratory Methods and Analytical Procedures. A Survey of Statistical and Mathematical Techniques. By DESIRÉ L. MASSART, AUKE DIJKSTRA, and LEONARD KAUFMAN. Elsevier/North-Holland Inc., 52 Vanderbilt Ave., New York, NY 10017. 1978. 596 pp. 16 × 24 cm.

Computers in the Clinical Laboratory: An Introduction. Clinical and Biochemical Analysis: A Series of Monographs and Textbooks, Vol. 8. By E. CLIFFORD TOREN, Jr., and ARTHUR A. EGGERT. Dekker, 270 Madison Ave., New York, NY 10016. 1978. 166 pp. 15 × 23 cm. Price \$19.75.

Cutting's Handbook of Pharmacology. The Actions and Uses of Drugs, 6th Ed. By T. Z. CSKAY. Appleton-Century-Crofts, 292 Madison Ave., New York, NY 10017. 1978. 697 pp. 14 × 23 cm.