which on integration gives:

$$\ln \frac{A}{A_0} = \frac{-k}{v} \ln \left(1 + \frac{vt}{V_0}\right) \quad \text{(Eq. 4)}$$

Provided that vt/V_0 is <1, this expands to:

$$\ln \frac{A}{A_0} = \frac{-k}{v} \left(\frac{vt}{V_0} - \frac{v^2t^2}{2V_0^2} + \frac{v^3t^3}{3V_0^3} - \ldots\right) \quad \text{(Eq. 5a)}$$

$$= \frac{-kt}{V_0} + \frac{kvt^2}{2V_0^2} - \frac{kv^2t^3}{3V_0^3} + \ldots \quad \text{(Eq. 5b)}$$

Thus, to a good approximation, deviations from rectilinearity in the ln (A/A_0) *versus* t plot can be accounted for by the terms $[(kvt^2/2V_0^2) - (kv^2t^3/3V_0^3)]$.

We demonstrated the validity of the correction by examining the effect of dilution on the diffusion of *p*-methoxyacetanilide from 0.2 *M* phosphate buffer[1], pH 7.2, into 1-octanol. The compound is virtually completely unionized at this pH, since its pKb is about 13.

The octanol phase was stirred mechanically and the aqueous phase magnetically. The area of the interface was 81 cm.^{2}, and the temperature was 22°. Samples were taken from and returned to the aqueous phase with a syringe. Concentrations were determined on a Unicam SP.800 spectrophotometer. The initial volume of the aqueous phase was 350 ml., and the volume of octanol was 500 ml. The partition coefficient of *p*-methoxyacetanilide between these phases is 10.5, so that there was negligible back-diffusion, as shown by the straight-line logarithmic plot of diffusion in the absence of dilution (Fig. 1), up to test times of 1 hr.

When the aqueous phase was diluted with buffer at a rate of 3 ml. min.$^{-1}$, the rate of diffusion of drug decreased (Fig. 1). Applying the correction brought the loss curve back to the first-order line.

[1] Clark and Lubs.

(1) A. H. Beckett and A. C. Moffat, *J. Pharm. Pharmacol.*, **22**, 15(1970).

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BOOKS

REVIEWS

Animal Experiments in Pharmacological Analysis. By Floyd R. Domer, Charles C Thomas, Springfield, IL 62707, 1971. 669 pp. Price $26.50.

This treatise on the quantitative aspects of pharmacology stems from the teaching program of the author, who has taught this phase of pharmacology to graduate students for many years. It is therefore expressly intended to be of service to pharmacologic specialists who are constantly confronted with the problem of conducting quantitative evaluation of drug activity on specific organ systems.

The text is divided into chapters dealing with the evaluation of drugs on the various organ systems, such as the Neuromuscular Junction, the Autonomic Ganglic, Smooth Muscle, and others. These specific topic chapters are preceded by three general introductory chapters on the Five Areas of Pharmacology, Initial Screening Experiments, and Toxicity Determination.

The author develops the subject matter of each chapter with broad introductory comments regarding the purpose of the experiment. Detailed description is included of operational procedures, often well illustrated with pictures or diagrams. Constant-temperature baths, stimulating electrodes, and pieces of equipment used in many pharmacologic procedures are shown in the diagrams of experiments.

Chapter 11, Techniques for Evaluation of Anesthetics, is especially commendable and is abreast of progress in the field. This, like the other chapters of the book, is provided with an adequate bibliography indicating an extensive knowledge of the various areas of pharmacologic techniques with which the author is acquainted.

This text is clearly written and exemplifies an excellent command of expository writing by the author. It is destined to serve a very useful purpose as a guide to investigators in the complex field of specific organ quantitative pharmacology.

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