
BOOK REVIEWS

Animal Models in Psychopathology by Nigel W. Bond (Published by Academic Press Inc., Orlando, Florida 32887, USA), 1984, pp. xii + 318. Price: \$29. £22.00.

The book opens with an interesting quotation of the Philosopher Mary Midgley (*Beast and Man*, 1979): "We are not just rather like animals; we are animals. Our differences from other species may be striking, but comparisons with them have always been, and must be, crucial to our view of ourselves."

The volume contains 11 chapters:- 1) *Animal Models in Psychopathology: An Introduction* (N. W. Bond), 2) *Animal Models in Neurobehavioural Toxicology* (R. W. Russell & D. H. Overstreet), 3) *The Effect of Environmental Odours on the Sense of Smell* (D. G. Laing), 4) *Olfactory Bulbectomy as a Model of Depression* (A. D. Cairncross), 5) *The Aetiology of Stress Induced Ischaemic Heart Disease: the Use of Animal Models* (J. R. Bassett), 6) *Animal Models of Obesity* (L. H. Storlien), 7) *A Clinician Looks at Animal Models of Anorexia Nervosa* (P. J. V. Beumont), 8) *Schedule-Induced Self Injection of Drugs: An Animal Model of Addiction* (G. Singer and M. Wallace), 9) *Self-Stimulation and Psychotropic Drugs: A Methodological and Conceptual Critique* (D. M. Atrens), 10) *Animal Models of Memory Disorders* (D. C. Overstreet & R. W. Russell), 11) *Behavioural Teratology: Fetal Alcohol Exposure and Hyperactivity* (N. W. Bond).

Each of the chapters contains critique of discussions on important animal models available under the respective areas of the chapter in respect of the promise and the limitations associated with the using of the models. The actual descriptions of the experimental methodologies of the models have not been provided except in one or two of the chapters, *i.e.*, this is not a book of methods.

The chapter of Russell & Overstreet provides an interesting review of the knowledge gained by using models of neurobehavioural toxicology for proper environmental management, *e.g.*, the animal researches about the effects of exposure to pesticides, to industrial solvents, to metals (lead and mercury) and to drugs leading to side effects (*e.g.* tardive dyskinesia). Another interesting chapter is of Cairncross presenting the depression model of the olfactory bulbectomized rat. The method has been well described in

detail. Bassett pointed out: "prolonged exposure to psychological stresses such as anxiety, apprehension or fear, is known to induce many degenerative disease states . . . The study of psychosomatic states in humans has profited enormously from the availability of experimental models of these diseases in animals. This is particularly so in the case of ischaemic heart disease." The chapter of Storlien on obesity points out that the regulation of body weight is related to the non-shivering thermogenesis and the possible mechanisms of limiting energy stores through wastage of excess energy as heat, and to the hypothalamic integration of information about the organism's energy supply and utilisation. The chapter of Atrens on self-stimulation of the type discovered by Olds and Milner, has been framed as a discussion on conceptual issues: whether the self-stimulation implies a hedonic-affective state or the non-hedonic states like obsessive-compulsive or addictive behaviours which have little to do with pleasure. The chapter of Bond has brought out one concomitant of fetal alcohol exposure namely, hyperactivity which has been suggested to be mainly due to a delay in the development of a cholinergic inhibitory system and probably also due to alteration of other neurotransmitter systems in children exposed to alcohol during fetal age.

On the whole, the volume produced by contributors from Australian institutions, is an outstanding book to study.

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Experimental Physical Chemistry by R. C. Das and B. Behera, (Published by Tata McGraw-Hill Publishing Co. Ltd., 12/4, Asaf Ali Road, New Delhi 110012), 1983, pp. 360. Price: Rs 25.50.

This book is a useful experimental text for undergraduate and postgraduate students in Physical Chemistry of Indian Universities. The authors have taken pains to discuss experiments covering most branches of Physical Chemistry. The experiments have

been designed keeping in view of the equipments and facilities usually available in laboratories of Indian Universities. They have been selected such that they are easy to perform and can be completed in four to seven hours. Each experiment is provided with a detailed procedure, along with the necessary theoretical background so that the student can understand and carry out without much difficulty. This type of treatment of the subject is unique and useful for a student who prepares for a viva voce examination.

This book describes detailed procedures for 100 experiments covering all aspects of Physical Chemistry. The experiments described are well within the budgetary limitations of Indian Universities. In addition, an almost equal number of related experiments have been suggested without describing their procedures in detail. Experiments with highly expensive and sophisticated equipments such as those involving NMR spectroscopy, IR spectroscopy, mass spectrometry and gas chromatography are excluded, since they are still considered as "research equipments" in our laboratories. However, experiments involving UV-visible spectrophotometer, polarograph, pH-

meter, potentiometer, conductivity bridge, polarimeter, magnetic balance, thermogravimetric balance, common GM counter, etc have been described. These equipments are easily available nowadays and are manufactured in India.

This book consists of 21 chapters, of which 19 chapters cover the experiments involving all branches of Physical Chemistry. The first two chapters are, however, of fundamental nature guiding the student in recording of the observed data systematically and in their treatment. In addition, appendix at the end of the book contains several useful tables with data relevant to the experiments described in the text.

Thus, with the concise background of the theory for each experiment, this book with its simple style and detailed discussion of the procedures, forms an ideal laboratory text for students of Indian Universities at the undergraduate and postgraduate levels.

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NEWS

THE BIRTH OF EARTH AND ITS MOON

... Scientists "have samples of the original star dust from which our solar system was made. Microscopic packets of it were trapped within meteorites that accreted, or formed, out of the stellar dust shortly after the birth of the solar system some 4.6 billion years ago. Using techniques developed to analyze moon rocks, cosmochemists have examined several of these meteorites that have fallen to earth in recent years. They have found exotic isotopes that may well have been created in a nearby supernova explosion, the violent death throes of another star. These newly forged elements would then have been blasted toward a gathering cosmic cloud that would eventually give birth to our solar system. Planet Earth, suggests Robert Clayton [U. Chicago], may contain the star dust from ten or twenty vanished solar systems. ... Earth, like all moons and planets, was

struck countless times by other bodies pulled in by its gravitational tugs. When Earth was small, some of these were probably large enough to break our growing planet apart. Each time this happened, Earth reassembled, a bit bigger than before. ... Many scientists suspect that when Earth was only a few tens of millions of years old, an object perhaps as large as Mars struck our accreting planet at more than 35,000 kilometers an hour. The planet survived, although much vapor and molten rock were ejected into space. Some of the ejecta would have coalesced into the moon."

[(Rick Gore in *National Geographic* 167(1):4-51, Jan 85.) Reproduced with permission from Press Digest, *Current Contents*®, No. 14, April 8, 1985, p. 11. (Published by the Institute for Scientific Information®, Philadelphia, PA, USA.)]