

Not Just Guinea-pigs

The Laboratory Animal—Principles and Practice. By W. Lane-Petter and A. E. G. Pearson. Pp. xi+293. (Academic: New York and London, December 1971.) £4; \$11.50.

Laboratory Animals: An Annotated Bibliography of Informational Resources Covering Medical Science (Including Husbandry Technology). Edited by Jules S. Cass. Pp. iv+250+60. (Hafner: New York; Collier-Macmillan: London, April 1972.) £6.75.

The Laboratory Animal is an attractive, well produced volume containing eleven chapters on the principles and practices of laboratory animal science. Although most of the contents are familiar, the authors have presented the material in a new and interesting manner. For example, the chapter on utilization is really a delightfully phrased psychological analysis of a scientific investigator and his reasons for choosing a particular species of animal.

The chapters on sources and trends refer to available supplies and species likely to be in demand in the foreseeable future. This section throws new light on both scientific and philosophical problems, in particular those associated with stray dogs and cats and the destruction of more animals each year than are needed by scientists. Some practical suggestions for the guidance of those seeking to supply collected dogs and cats or those wishing to use them may be ill received as a growing number of scientists and animal welfare people advocate that only specially bred animals should be used for research. The increase in the use of invertebrate animals in the UK is presented in a bold and unbiased manner. The authors clearly state the numbers of animals used from 1935 to 1970 and the uses to which they have been put. This information may well provide material for persons wishing to oppose the use of living animals in scientific research. On the other hand, substitutes for laboratory animals are given equal prominence, and attention is drawn to the advances made in this field. However, there will always be a need to investigate response in the complete living animal.

The chapter on genetics is not up to purists' standards but it does contain good basic facts which are well presented and of immense value to those establishing animal colonies. The importance of the health and physical environment of laboratory animals is given in true perspective with regard to investigators' requirements, and both these chapters contain more concise information than may be found in many handbooks devoted entirely to these subjects.

It is surprising but refreshingly

honest for one of the pioneers of specific pathogen-free (SPF) animals (W. Lane-Petter) to declare that "experience of the use of SPF animals has often been most unsatisfactory". Nutrition has been given a comprehensive coverage and the chapter is factual with a minimum of theoretical ideas. Administration and husbandry form the weakest section in this otherwise excellent book. Animal technician training is exceedingly important but some of the details may soon be out of date as the Institute of Animal Technicians is reorganizing its training schemes.

The final chapter is devoted to information on laboratory animal centres, national and international organizations engaged in laboratory animal science, professional societies, legal requirements and the Littlewood Committee report. A comprehensive list of references, a bibliography of books dealing with laboratory animals, and a subject index complete a worthy publication.

Cass's *Annotated Bibliography* comprises three separate compilations; two are reprinted from *Fed. Proc.*, 19 and 22 (1960 and 1963), and the third is by the US Veterans Administration department. Fundamental information which is difficult to find elsewhere in published form is well presented here. Abstracts are provided with each reference and these are invaluable in so far as they provide brief details of the subject matter.

The references in the first two sections have been well chosen from a wide range of subjects including anatomy, physiology, psychology, disease, anaesthesia and euthanasia. Their potential value is somewhat lessened by the fact that there are few references after 1962. A publication of this nature, however, cannot contain completely up to date references because abstracting and preparation are time consuming. The third section specializes in laboratory animal science whereas the earlier compilations covered a wider and more diverse range of subjects.

The literature on laboratory animals which has been quoted is comparatively recent and includes selections from textbooks, monographs and proceedings of symposia, as well as articles from journals. At the end of each section cross references enable the user to consult related abstracts in other sections so that specific details are not overlooked which would defeat the principal purpose of the bibliography.

Omissions must be accepted because it is impossible to cover adequately everything in a bibliography containing about 5,500 references on a variety of subjects.

Nevertheless, this publication will provide valid information up to 1963 and can be used with Medlar who provides references backdated to 1964. It

is the sort of book that the libraries of teaching and research establishments cannot afford to be without.

GEORGE PORTER

Nature of Water

Water and Aqueous Solutions: Structure, Thermodynamics and Transport Processes. Edited by R. A. Horne. Pp. vii+837. (Wiley Interscience: New York and London, March 1972.) £15.

As the editor of this book states in his introduction, the past ten or fifteen years have seen a remarkable revival of interest in the properties of water and aqueous solutions for reasons connected with recognition of the importance of water in biological systems and with pollution and ecological matters. Simultaneously with the growth of sophisticated science and technology, pollution of the environment, especially water resources, has occurred but only recently has society awakened to the dangers of this situation. One is reminded of Renaissance times when, alongside outstanding growth of culture, art and mercantilism, great cities such as Urbino and Florence tolerated the most unhygienic conditions in public places.

The appearance of this book is therefore both timely and academically welcome. The editor has gone to great pains to assemble nineteen chapters, from well-known authorities in the field, which cover the main areas of contemporary interest in the study of water and aqueous solutions. The book starts off with three chapters on ice followed by two comparative chapters on non-aqueous electrolyte solutions by Padova and on fused salts by Rhodes. Chapters on seawater and on biofluids then follow. The next five chapters are concerned with theoretical treatments of water and aqueous solutions and provide an authoritative account of the present state of knowledge in this field. The contributors are Ben-Naim, Stillinger, Davis, Jarzynski, Kell and Vaslow. Chapter 13 by Millero, with its addendum of data on partial molal volumes, is exceptionally valuable because it contains a wealth of tabulated data, critically appraised. Chapters by Samoilov on residence times of ionic hydration and by Wen on tetraalkylammonium salts, which, by their exceptional behaviour in water, have attracted much attention, are then presented. Ling, on hydration of macromolecules, covers a very important field but the treatment is disappointingly old fashioned. Little consideration is given to electrostatic effects at polyions and polyampholytes and ideas on "solute exclusion" from ion-exchange resins and polarized layers are presented without reference to the importance of electrostatic salting-out