

define nutritional requirements: apart from a basic lack of information, it is not possible to assign a single requirement level for a given nutrient for a given species, as levels vary depending on the endpoint selected, the phase of the life cycle, and so on. In other words, for most species we have no idea whether 'nutritionally complete' artificial foods or any other diet are in fact supplying their requirements.

A listing of nutrient levels in a wide variety of foodstuffs follows and the final chapter considers the use of food in environmental enrichment. It makes the important point that wild foods, such as fruits, are not necessarily nutritionally equivalent to cultivated plants, and discusses the importance of ensuring that a varied diet is also nutritionally balanced.

Overall, then, this book is a good initial introduction to primate nutrition and diet formulation for those working with primates in captivity or with an interest in nutrition in general. However, those working with particular species, or indeed on any aspect of the study of nutrition, will need to delve much further into the original literature, particularly as some of the summary data should be treated with caution. This will be made easier by the fairly extensive reference lists provided for each chapter.

However, despite the huge amount of information reviewed here, the list of nutritional requirements is so limited as to be of minimal value to those working with most species in captivity. Unfortunately much of the work needed to formulate diets for captive primates will remain largely a matter of trial and error. All in all, the impression left by the book is of how little we know, not how much. This volume is a very useful source book, but it does not, indeed, it cannot, live up to its title.

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S. Ashcroft and C. Pereira. *Practical Statistics for the Biological Sciences*. Palgrave, Suffolk: Macmillan 2003. pp. 148 + Appendices, Glossary and Index. £18.99, ISBN 0 333 96044 0

The teaching and learning of statistics and mathematics is a thorny problem for academics and students alike across all subject areas, not least the health and life sciences. *Practical Statistics for the Biological Sciences* represents one of the latest additions to the wide variety of 'how to do' statistics books currently available. The main advantage of this publication over other similar texts lies primarily in its straightforward approach to handling and interpreting

data. The authors argue for example, that although many biological scientists will have some knowledge of statistical analysis, this knowledge is often quite superficial and consequently many students need assistance with applying statistical tests in a 'real' research setting. It is this gap in the practical application of statistical tests that the book hopes to fill.

Overall, the book is visually appealing, logical and easy to follow. It opens with a general introduction to basic statistical concepts, introducing relevant terms and ideas accompanied by a clear explanation of their meaning. The first chapter also includes a very easy-to-use flowchart, which allows the reader to identify the appropriate test for use in different research situations. The authors then go on to present a series of chapters that deal with specific statistical concepts and tests including descriptive statistics, Student's *t* test, Mann-Whitney U test, ANOVA, correlation and  $\chi^2$ . Within each chapter, there is a description of the featured test and when it may be used appropriately. The statistical formula for the test is presented and a worked example is included.

The book is accompanied by a CD-ROM containing a new statistical package *PractiStat*, which can be used to conduct any of the tests included in the text. The CD-ROM also includes sample data for use in conjunction with tutorial examples presented in each chapter.

Overall, *Practical Statistics* would appear to be a useful book that adequately covers a comprehensive range of basic statistical terms and technique. It is clearly written and presented and as such should prove to be a useful and popular text for students across a wide range of undergraduate and basic postgraduate programmes. However, my principle reservation concerning this, and similar books, lies in the wider issue of the development of students skills in statistics and data analysis. While the current book provides a clear description of the process of how to analyse data, for many students the key problem is the question of why do it. Thus, while the current textbook clearly describes how to enter data, use menu bars appropriately, and identify key pieces of information from the results section, it is unlikely to solve more fundamental issues concerning the rationale for employing statistical tests: a key problem for many students.

Having said this, I would recommend this text, particularly for use in undergraduate research courses, but would also consider presenting it alongside a more theoretical text that dealt more thoroughly with the issue of why rather than how.

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