Fowler, J. and Cohen, L. 1987. "Statistics for Ornithologists". pp 176. B.T.O. Guide 22.

The contents page of this B.T.O. Guide was a disappointment. The book turned out to be yet another introduction to statistics, covering the standard material of all introductory statistics textbooks: sampling, histograms, means and medians, the normal distribution, standard deviations, hypothesis tests, tests of means and variances, regression and correlation, chi-squared tests, analysis of variance, etc. Introductions to statistics have been written from the viewpoint of every conceivable discipline. The differences between these books lies not in their statistical content, but in the examples used to motivate the statistics. So, where an 'all-purpose' introduction to statistics might introduce probability by discussing coin-tossing experiments, this book uses the sexes of birds. I leave what I would have liked to have seen on the contents page to the last paragraph of this review. I now assess the book as it is, an introduction to statistics with an ornithological flavour.

Firstly, it is a 'cookbook' introduction, i.e. it does not delve into any of the mathematical theory underlying the statistics. A rigorous mathematical approach would have been inappropriate. The danger of the superficial approach is that it can lure the reader into a false sense of understanding - it is good that many chapters end with a section entitled "Restrictions and Cautions".

Secondly, it is a brief introduction. Most ornithologists' statistical problems will quickly get out of the range of methods covered by this book. However, the basis for much statistical analysis is hypothesis testing, and the introduction to testing given by the book is sufficient to give readers a feel for this crucial area of statistical reasoning. All the same, I feel that a little more could have been said about the meaning of "significance", P-values and type I and type II errors.

I have a few quibbles. On p. 24, the frequency table of Robin winglengths is exactly symmetrical, something that would be most unlikely to occur in a real sample. On p. 109 and p. 110, the confidence intervals are depicted perpendicular to the regression line, rather than perpendicular to the x axis. In Chapter 9 (Data Transformation), the advice is somewhat old-fashioned, and does not point to the possibility that data which are counts or proportions could be better handled by recently developed techniques such as the generalised linear model, rather than slavishly trying to transform everything to a normal distribution.

Overall, as an introduction to statistics for the non-mathematical ornithologists, the book succeeds. The concepts that are covered are clearly presented, and are motivated and applied to ornithological data. Frequently the reader is referred to published applications in journals such as Ringing & Migration, British Birds and Bird Study.

I would have liked to have seen a book arranged by applications, rather than methods. When most researchers, ornithologists included, go into statistician mode, the starting point is the data set to hand and they are looking for appropriate statistical methods. Thus in a book written to help observers and ringers to analyse their data, possible chapter headings could include: recovery and retrap data, biometric data, moult data, nest record card data, transect and other count data, relating environmental and biological variables, measurements recorded over time. I would like to see chapters that introduce these topics and then point to key literature which takes them further.

L.G. Underhill
Department of Mathematical Statistics
University of Cape Town
RONDEBOSCH
7700

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ERRATA

Table 1 of 'Thirteen years of ringing swifts' by Bunning (1987. Safring News 16 (1), page 9, contains the following errors:

- The number of Horus Swifts ringed (first row) should read '3', not '1'.
- The grand total in Table 1 should accordingly read 1 315.

The Editor tenders apologies to any readers who have been misled by these errors.