Book Review

Expedition Field Techniques: Small Mammals (excluding bats) Second Edition

A. Barnett and J. Dutton

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As the authors point out in their introduction, nearly half of all mammals can be considered small mammals (2493 species of non-volant rodents, insectivores, marsupials and elephant shrews with adult mass < 1 kg). Thus the small mammals comprise a diverse and fascinating group to study, and by virtue of their similarities in terms of phylogeny, body size and locomotion, the techniques that are used to study members of this group tend to be relevant and applicable to the entire group. Hence the relevance of this compilation of field techniques published by the Royal Geographic Society as a guide for their members who are planning an expedition.

The philosophical basis for this book does present a bit of a conundrum, particularly to African small mammal researchers. The book is presented from a British perspective, and aimed at those crossing the English Channel in order to gather information about some interesting location (an expedition). The rationale presented to study small mammals as part of an expedition appears to be a post hoc justification that those who are engaged in an expedition to some exotic destination might as well do some work on the local small mammal community. Thus the techniques reviewed here tend to be limited to that which is achievable in a relatively short time. This specifically excludes some of the more productive approaches, such as field manipulations and long-term studies. Unfortunately, it is precisely these approaches which have yielded the best insights into small mammal ecology, as exemplified by Jim Brown's work in Arizona (e.g. Brown & Heske 1990). In contrast to this concept of opportunistic expedition research, African small mammal ecologists tend to have specific objectives in mind and their field trips and techniques are aimed at achieving these objectives.

The techniques dealt with are almost as diverse as the small mammals for whose study they were developed, and reflect considerable ingenuity of the field ecologists trying to understand small mammals. Each technique description includes a brief summary of what can be done, how it can be done, with references to specific technique papers or successful field studies which have applied the technique, as well as some assessment of the problems associated with the technique (with references where appropriate).

Not suprisingly, a considerable amount of attention has been devoted to the methods for capturing small mammals and some of the associated problems. Biased sampling is the bane of any small mammal ecologist, although this is rarely reflected in the literature where capture data are generally interpreted quite literally as being a representative sample of the particular population, species or community being studied. A number of critiques of sampling methods have been published (e.g. O'Farrell *et al.* 1994), and although some of these papers are referred to in this book, the actual problems are glossed over by Barnett & Dutton. This is an issue that the community of small mammal ecologists needs to address, both in training and research, in order to increase the relevance of their work.

The sections on 'Techniques', 'Specimen Preparation' and 'Working on the Specimen' cover the collection of information and material from live and dead specimens. Not enough weight has been given to the medical dangers of working with small mammals, which are recognized vectors of a number of diseases. As an example, the recent human mortalities in North America, owing to the rodent-transmitted hanta virus, are not mentioned. Some personal biases are also evident, for example, the recognized and widely used technique of collecting blood from the supra-orbital sinus is dealt with as 'It is also supposed to be possible to get a sample from the blood vessels just behind the eye'. The sections on 'Dietary Analysis' and 'Tracking Small Mammals' are brief but provide clear perspectives on a good range of relevant papers. This is followed by a section on 'Other techniques', which range from the innovative to the quixotic. The use of sand trays providing diminishing returns as a method of assessing behavioural responses of small mammals (e.g. Kotler 1984) has been ignored, despite the considerable success of this technique, and its applicability to short duration expeditions.

'Describing the Habitat' and 'Specimen Identification' are rather cursory, while the section on 'Recording Data' is the sort of sound common sense and field protocol that is the essence of good fieldwork. The section on 'Post-fieldwork Activities' is rather specific to true expeditions, and includes strong encouragement to publish information collected on expeditions. The section on 'Data Analysis' appears next as some sort of Freudian slip, and is again too brief to be of any value. 'Equipment and Manufacturers' is a list of sources for field equipment, but is largely limited to suppliers in Britain. The 'References' are clearly presented, and one of the more valuable contributions of this book. The texts listed under 'Recommended Reading' are also useful, although I noticed books on Botswana were listed under East Africa, while de Graaff (1980) and some of the more useful South African field guides were absent from the South African list.

This compact, softcover book (126 pages, 15 × 21 cm) is spiral bound and printed on good quality paper. There are only two line drawings, a definite shortcoming as a number of the techniques could have been more easily explained through drawings. Numerous typographic errors detract from the quality of presentation.

Despite these limitations, this book does serve as a useful introduction to small mammal field study techniques, particularly as the different techniques are discussed with reference to published literature, to which the reader can refer in order to further evaluate the technique. The reader should, however,

be aware that the references provided do not represent a bibliography, and should be used as an entry point to further study on the particular technique. I can recommend this book to those entering into the field of small mammal ecology, and even old ratters may pick up some useful ideas.

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