

BOOK REVIEWS

DIETZ, C., O. von HELVERSEN, and D. NILL. 2007. Handbuch der Fledermäuse Europas und Nordwestafrikas – Biologie, Kennzeichen, Gefährdung [Handbook of the bats of Europe and northwestern Africa – biology, identification and conservation status]. Frankh-Kosmos, Stuttgart, 399 pp. ISBN 978-3-440-09693-2, € 49.90

Opening a book can sometimes mean to dive head first into a new dimension of experiencing knowledge, to be presented with a novel and inspiring perspective on seemingly well-known terrain and matters. It is hard to put literature like this down again, since it instantly fascinates and excites in many diverse and different ways. This is a glimpse of what happened to me when I picked up and first flipped through the recently published “Handbook of the bats of Europe and northwestern Africa” by Christian Dietz, Otto von Helversen and Dietmar Nill.

Scientific literature frequently falls into two categories: First, academic, and second, popular works. Academic volumes such as the “Handbook of the mammals of Europe” (Krapp, 2001, 2004) tend to be rich in text and detail and have an extremely high information density. They may present original data summarized in tables, graphs, maps and statistical analyses, addressing primarily the needs of scientists. In contrast, popular literature uses more simple terms, highlights outstanding features to the reader, and can be rich in graphic design elements and glossy photographs. However, often, it delivers little scientific detail besides the general descriptions for instance of species, as can be frequently found in identification guides (for example, see Schober and Grimmberger 1987).

A handbook promises to be something distinctly different. It represents an attempt to merge the best of both writing worlds, academic and popular, in order to forge something new at their nexus. Ideally, both academic and general public readers interested in a subject can reach to the bookshelf for a handbook and find the most important information on an aspect within the field concerned in an easily accessible and well presented way, within a few seconds. This makes handbooks important and valuable resources for condensed information, on multiple levels across society, ranging from researchers to conservation workers and political decision-makers. However, it has to be considered a particularly tricky task to balance the diverging needs of readers varying in background as much as those interested in European bats do. Thus, a dedicated handbook on European bats trying to address this aspect in a compact format has been largely missing for a long time, and for the attempt to fill this gap the alone the authors deserve our attention and applause. In this review, I will summarize and comment on the outcome of their endeavour.

First, after the content overview sets the stage, the reader is introduced to bats. Mostly brief, but sometimes, when distinctive features are addressed, also longer sections, concisely characterize Chiroptera, their species diversity, flight, echolocation, flight behaviour, feeding habits, annual cycle and migration, physiology (e.g., torpor and hibernation), sociality, population dynamics, parasites and conservation status, protection and finally methods of identification by calls. All sections are to make it short excellently written and simply a pleasure to read, all the information is easily accessible, moderately but sufficiently backed up by carefully selected references, and presented in a great layout. Another distinguishing strength of the book manifests itself when browsing and also while reading: In a stunning way, informative and unusually detailed black and white illustrations are combined with excellent high-quality maps, colour photography as well as graphs presenting relevant key data. The level of all illustrations is consistently very high, they are fascinating, with attention to detail, and only rarely graphs are of improvable quality. All in all, the first 127 pages could have been a little – and excellent – book by themselves.

Second, the book contains a large section with detailed species accounts. Short the introducing remarks, yet sufficient to see that an enormous amount of data (from 30,000 caught animals in the wild alone), partly unpublished, has been used for compiling the species-specific information, and the authors illustrate very precisely how the measurements presented in the species accounts were taken, using a drawing of *Eptesicus nilssonii*. A key to the families of Europe, Northern Africa and adjacent Asian areas follows which allows for assignment of a bat to a family, talking into account all occurring families of the biogeographic region. Subsequently, more detailed identification keys are provided to distinguish all covered species of (1) Rhinolophidae, (2) Hipposideridae and (3) Vespertilionidae. While most keys try to guide the user with sometimes cryptic descriptions only, this one excels and not only uses precise and yet short descriptive texts, but provides first class photographic imagery, and, in tricky cases, additional dental black and white drawings of relevant details. While the book may be a bit bulky and heavy to handle in the field with its 399 pages and 1849 grams, according to my scales, the key no doubt may be easily photocopied and taken along into the field, has a perfectionist touch to it and lives up to highest standards. The species accounts themselves consist of a framework of neatly standardized categories of information: species names in eight (!) languages, measurements neatly tucked away in an easily found box on the page margin, traits/characteristics, echolocation calls, distribution, habitat, behaviour, reproduction, feeding, life expectancy, movements and migration, threats, population estimate, conservation and finally, open research questions and specific literature. Especially the open questions I can only congratulate the authors to: Rarely any

work of this kind uses the opportunity to point out the issues that need to be addressed next and thus inspire and spark further scientific investigation. Yet this step is integral to the process of science. Presenting knowledge is only one side of a coin: Asking the questions that are pressing, in this case especially conservation questions, is the other one, and of utmost importance.

It is not at all an easy task to criticize a work of outstanding quality. While it is possible to ask for the number of sampled individuals in the measurement summaries presented for each species, which is frequently omitted (e.g., Reid 1997), but not always (Flannery 1995a, 1995b; Bonaccorso 1998; revealing often extremely low sample sizes down to one), to look for visual discontinuity in the graphs used (e.g., compare pp. 61 and 75) or find other details, these short-comings are so minor and few that they may well be forgiven.

Overall, C. Dietz, O. von Helversen and D. Nill together have succeeded in accomplishing something rarely done and highly prized. Coming from different focal areas of interest and career stages, but united in their passion for bats, they have approached the task of filling and bridging a gap in the literature. They have used first hand original data and high quality reference materials, making the most of the synergy effects of a life-time of research, of brilliant photography, excellent drawing and writing skills, and forged a work of a new standard that will be hard to beat. The result is more than convincing, and I firmly believe a landmark publication has been created with this volume, representing true and genuine progress in making accessible the knowledge currently available on European and North African bats in a unique and great way. A handbook could not be implemented in a better way, thus the authors deserve our respect for having taking on an endeavour which simply came out amazingly. I sincerely hope the book will soon also be available in English, thus accessible to a wider circle of readers. However, even without this the recommendation can only be for anyone interested in bats to have a copy at hand – after all, it is a handbook, and, with all due respect, one of the best I have seen so far.

STEFAN M. KLOSE — *Institute of Experimental Ecology, University of Ulm, Albert-Einstein Allee 11, 89069 Ulm, Germany, and School of Integrative Biology, University of Queensland, Brisbane QLD 4072, Australia; E-mail: stefan.klose@uni-ulm.de*

LITERATURE CITED

- BONACCORSO, F. 1998. Bats of Papua New Guinea. Conservation International, Washington D.C., 489 pp.
- FLANNERY, T. 1995a. Mammals of New Guinea. Reed Books, Chatswood, Australia, 586 pp.
- FLANNERY, T. 1995b. Mammals of the South-West Pacific and the Moluccan Islands. Reed Books, Chatswood, Australia, 464 pp.
- KRAPP, F. (ed.). 2001, 2004. Handbuch der Säugetiere Europas. Band 4: Fledertiere. Aula-Verlag, Wiebelsheim, 1186 pp.
- REID, F. 1997. A field guide to the mammals of Central America and Southeast Mexico. Oxford University Press, Oxford, 334 pp.
- SCHOBER, W., and E. GRIMMBERGER. 1987. Die Fledermäuse Europas. Kosmos, Stuttgart, 222 pp.
- LACKI, M. J., J. P. HAYES, and A. KURTA (eds.). 2007. Bats in forests: conservation and management. The Johns Hopkins University Press, Baltimore, Maryland, xvi + 329 pp. ISBN 0-8018-8499-3, US\$ 85.00

In October 1995, a symposium titled “Bats and Forests” was held in Victoria, British Columbia to bring together those with a common interest in bats in forested ecosystems. The “Bats and Forests Symposium”, as it is now known, apparently served as a catalyst that sparked a surge of research, as the number of articles in the published literature addressing issues related to bats in forests increased dramatically between 1995 and 2004. In response to the increased information available on forest bats, the “Second Bats and Forests Symposium and Workshop” was held in Hot Springs, Arkansas in 2004. The central focus of the meeting was a series of invited papers designed to synthesize the scientific knowledge on key topics related to the ecology and management of bats in North American forests. The book “Bats in forests: conservation and management” was developed from those invited papers.

“Bats in forests: conservation and management” contains 11 chapters, generally divided into three topical areas, 1) an introduction to past and future research on North American forest bats, 2) a review of the ecology and behavior of forest bats, and 3) an overview of the interactions between forest management and bats. The assemblage of editors and chapter authors represent the foremost authorities on forest bats in North America. As a result, the complete volume provides a comprehensive synthesis of the current scientific understanding of bats in forested ecosystems.

Chapter 1, “Bats in forests: what we know and what we need to learn,” serves a 2-fold function. The first is to set the stage for the book with an overview of the ecology of North American forest bats as we currently understand it based on previous research. By the author’s design the literature review is not exhaustive, but recommendations for additional reading are provided for the reader wishing to gain additional knowledge in the area. The second goal of the chapter is to suggest “new directions” for future research. The author makes specific recommendations for additional research needed to provide land managers with information about forest bats that will allow them to consider bats in management and conservation plans.

Chapters 2 through 6 cover topics related to the ecology of forest bats in North America. Chapters 2 and 3 provide a comparison of diurnal roosting ecology and behavior of bats with different roosting strategies (i.e., cavity- and bark-roosting versus foliage-roosting). Night-roosting ecology, emphasizing function, types of structures, site selection, and fidelity, is covered in Chapter 5. Migration and seasonal differences in roosting ecology are covered in Chapter 6. Chapter 4 provides an overview of foraging ecology of forest bats. The amount of information presented on foraging ecology seems meager compared to the information on roosting ecology. However, the coverage in the book reflects the disparate coverage of the two topics in the published literature. In this regard, the book accomplished its goal of identifying areas in critical need of further research.

Chapters 7 through 11 examine topics related to the interactions between forest management and forest bats. Chapter 7 examines silvicultural practices used in North American forests and concludes with a discussion of potential implications of those practices for forest bats. Subsequently, Chapter 8 more

broadly examines the influences of forest management activities as a whole on bat habitat. The relatively unstudied topic of landscape-level influences on forest bats is examined in Chapter 9. Therein, the authors identify this as another area in critical need of additional research. Chapter 10 examines the topic of assessing forest bat populations. Although a chapter on population assessment seems out of place among chapters focused on forest management, the need to monitor bat population responses to habitat alterations in constantly-changing, managed forest landscapes necessitates such a chapter. For all practical purposes, Chapter 11 is a 'case-study' of forest management planning that includes considerations for bats, with forest product companies as the landowner. Coverage of forest management planning by other large-ownership landowners (e.g., governmental agencies) would have made a nice compliment to this chapter.

The strength of the forest management and bats section is the recurrent theme of 'practical' considerations for bats in forest management planning. Except in the case of threatened and endangered species, landowners rarely manage for single species, and certainly not for bats. The take home message

from this section is that managers can include bats in forest management planning and simultaneously accomplish a multitude of other objectives.

Much has been added to the body of scientific knowledge on bats in forested ecosystems since the "First Bats in Forest Symposium". Although the "First Bats in Forest Symposium" identified gaps in knowledge that were addressed by research in subsequent years, new gaps and research avenues were identified in the process. Such is how the scientific process works. The more we learn the more we realize how much we do not know. I predict that "Bats in forests: conservation and management" will serve as the next catalyst for research on forest bats. With this book as a guiding document, we will gain a greater understanding of bat-forest interactions over the next decade, until the next symposium. This increased understanding of bats and forests will be a major contribution to the larger goal of discovering innovative ways to integrate biodiversity and forest management objectives.

STEVEN B. CASTLEBERRY — *Warnell School of Forestry and Natural Resources, University of Georgia, Athens, Georgia 30602, USA; E-mail: scastle@warnell.uga.edu*