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BOOK REVIEWS

The return of the unicorns: The natural history and conservation of the greater one-horned rhinoceros

Dinerstein E, Columbia University Press, New York, 2003, 316 pages, 93 illustrations, US\$59.50, ISBN 0-231-08450-1

Over the last decades, most books published on rhinos focused mainly or entirely on the African species (black and white rhinoceros). Hence, the new book by Eric Dinerstein on the greater one-horned or Indian rhinoceros (*Rhinoceros unicornis*) fills a gap in the rhino literature. The book comprises three parts. Part I outlines the evolutionary history of the rhinos, the population history of the modern rhinos and the culture around these animals and their horns (contrary to popular opinion, the rhino horn is *not* used as an aphrodisiac, but as a fever reducing medicine in some Asian countries and for handles of ceremonial daggers in some Arab countries). Part I concludes with the history of Chitwan valley (Nepal), where today one of the two remaining large populations of greater one-horned rhinos exists. The much longer Part II gives the best available compilation on a multitude of biological aspects of the greater one-horned rhinoceros, ranging from size and sexual dimorphism over feeding ecology to the determinants of reproductive success. This part is largely based on the author's papers published during the early 1990s, but in many cases augmented with newer observations, so even readers who are familiar with these papers will gain some information. The final part of the book deals with the recovery of the Chitwan population of the greater one-horned rhinoceros between 1966 (ca. 70 individuals) and 2000 (500+ individuals), describing in detail the socio-economic background and development in that area; a development in which the author has been closely involved.

The book is an excellent overview of many aspects of the biology and conservation of greater one-horned rhinos in Nepal. Unfortunately, the author almost completely ignores the existence of greater one-horned rhinos elsewhere. The other

major population of greater one-horned rhinos in and around Kaziranga National Park in Assam, India, is—at least in terms of numbers—an even greater success story than that of the Chitwan population, recovering from probably less than 20 individuals in 1908 to 1700+ individuals today. This population, however, is mentioned only four times (according to the index), and in two of these instances, it is mentioned in a negative context (frequent flooding, outbreak of septicaemia).

In several ways, the book is a personal book of the author. Not only does each chapter begin with a personal anecdote, but he also emphasises some of his opinions. His dislike of captive breeding of endangered species can be understood when we learn that the costs of a major exhibit in a western Zoo to house and breed a handful of rhinos (ca. 20 Mio US\$) are roughly equivalent to the costs of extending the buffer zone of a National Park in Nepal to offer space for an additional 1000+ rhinos, not to mention the positive impact of such buffer zone on other fauna and flora. However, the author's view on the issue whether the two large remaining populations of the greater one-horned rhinoceros should be mixed is questionable. He advocates that mixing should be tolerated, since "Modern conservation biology may need shortcuts to achieve goals, and they may not entirely satisfy the needs of other disciplines, such as ungulate taxonomy and population genetics" (p. 241). While the morphological distinction between the two populations is arguably insignificant, recent research has shown that there is a strong outbreeding depression on juvenile survival when animals from the two populations are mated. Thus modern conservation biology strongly suggests that the two populations should *not* be mixed.

The structure of the book is quite clear and it is well readable. However, numerical data are presented in a somewhat confusing way. Some data are incorporated into the text, some are in tables in the text, some statistical analyses are in the text, other analyses are found at the end of each chapter, and at the end of the book there are appendices with yet more tables. In some

cases, the reader has to search in several places to find information. The text of the book is carefully edited, but some figures are not satisfactory; a few are wrongly labelled and the legibility of others has suffered from reduction.

This book is important not only to all scientists interested in the greater one-horned rhinoceros,

but even more so to everybody interested in the planning or management of a large-scale nature reserve, especially in a poor country.

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The leafhoppers and planthoppers of Germany (Hemiptera, Auchenorrhyncha): patterns and strategies in a highly diverse group of phytophagous insects

H. Nickel, Pensoft Publishers, Sofia-Moscow, Goecke & Evers, Keltern, 2003, 460 pages, tables, photos, diagrams, €67.80, ISBN 3-931374-09-02

Is species diversity a synonym of species lists? No! Mere catalogues of taxa are boring and do not help, even if they comprise information about the status of vulnerability or if they are a Red Data Book. What we need is a data bank for the biology, bionomics, geographic range, population trends for each taxon in question. Our knowledge about Auchenorrhyncha (leafhoppers and planthoppers) is rather incomplete; information is scattered all over the literature. If we are interested in this group, we now find such a type of book: the monograph by Herbert Nickel offers a wealth of information on the German leafhoppers and planthoppers and we can take this treatise as a lighthouse for desired monographs on other animal groups.

Herbert Nickel devoted his current scientific career to the study of Auchenorrhyncha which culminated in the recent appearance of volume I of a long awaited key for the identification of Central European Auchenorrhyncha (Holzinger WE, Kammerlander I, Nickel H, 2003, The Auchenorrhyncha of Central Europe. Vol. 1. Fulgoromorpha, Cicadomorpha, excl. Cicadellidae). This demonstrates his outstanding expertise in auchenorrhynch systematics, faunistics and biology. Additionally, the author is well acquainted with the Central European flora.

The information in this book is based on 300,000 determined individuals and approximately 30,000 species records, 8600 of which could be related to plant species, collected during 13 years of fieldwork, on more than 500 localities in most parts of Germany. This database is supplemented by the

available literature (about 900 references) and the more important museum collections.

A brief characteristics of 620 species are presented in Part I (210 out of 460 pages in total) (145 Fulgoromorpha and 475 Cicadomorpha), with information on life cycles, phenology, habitat requirements, host or food plants, frequency on the host, abundance, seasonal migrations, geographic and altitudinal distribution as well as economic importance. In Part II (further 100 pages) the Auchenorrhyncha guilds on plant species (and families) are described and discussed. In Part III life strategies are analysed with topics such as host specificity and resource utilization, dispersal and life cycle.

The feeding preferences on plant groups are rather uneven. The graminoids, notably Poaceae and Cyperaceae, account for almost 300 Auchenorrhyncha species; woody plants (Fagaceae, Betulaceae, Salicaceae and Rosaceae) are attacked by about 50 species. Herbivore species richness is highest on plants that belong to species-rich taxa or/and that are represented with high biomass. A central issue of the book is host specificity. Almost 40% of the species are strictly monophagous; many of them occur on Poaceae. *Phragmites australis* and *Urtica dioica* are exceptional among herbaceous plants for their high Auchenorrhyncha species numbers.

This brief account of some results of the detailed study of Auchenorrhyncha demonstrates the wealth of information now available for this hemipteran taxon. What can we do with such a treasure? It can be a profound basis for the study of population ecology, community ecology and insect plant relationships. And it helps to monitor changes in the leafhopper and planthopper fauna by destruction of habitats or by invasion.

In relation to the primary material—an overview of the animals and the plants with their associated fauna—the synthesis is rather short. This is a signal that macro evolutionary patterns should be studied