

Cretaceous. Keep in mind that the oldest butterfly fossils are arguably Eocene, and the received opinion is that only primitive mandibulate moths were flitting around in the Cretaceous. Ergo, Vilorina must be wrong. But what if he *is not*?

These books are full of good stuff like that. If only I could require two years of Spanish as a prerequisite for my course in biogeography!

ARTHUR M SHAPIRO, *Center for Population Biology, University of California, Davis, California*

THE RETURN OF THE UNICORNS: THE NATURAL HISTORY AND CONSERVATION OF THE GREATER ONE-HORNED RHINOCEROS. *Biology and Resource Management Series.*

By Eric Dinerstein. New York: Columbia University Press. \$59.50. xix + 316 p; ill.; index. ISBN: 0-231-08450-1. 2003.

Thanks to decades of poaching for their valuable horns (worth \$30,000 a kilogram, more costly than cocaine by weight), the five living species of rhinoceros are among the most endangered large mammals in the world. The populations of the two African species have now been reduced by almost 90% since the early 1980s, and only a few dozen Javan rhinos and a few hundred Sumatran rhinos cling to existence in remote areas of Southeast Asia. Conservationists have long despaired that nothing could prevent the complete extinction of Asian rhinos in the wild, even with the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) bans on the export of rhino horn, and intense international pressure on governments to provide reserves and stop poachers.

Eric Dinerstein provides a glimmer of hope in this gloomy picture, with his success story of the conservation of the Indian or greater one-horned rhinoceros. Once reduced to about 1000 individuals in a few reserves in Nepal and India, their numbers have rebounded to at least 2400, and most of the success has occurred due to Dinerstein's efforts in both wildlife ecology and conservation efforts in Nepal. His ongoing research (since 1984) on the Nepalese populations is detailed in the first half of the book, which is written in the dry, declarative style of wildlife ecology scientific papers (occasionally punctuated by a more poetically written anecdote about his experiences in the wild). The second half of the book details his work in bringing the Indian rhino (and with it, many other coexisting mammals, such as tigers and elephants) back from extinction in Nepal. Strict antipoaching policies enforced by soldiers of the Nepalese government helped, as did the fact that few Nepalese have powerful guns

(unlike the situation in war torn Africa). The real success was the ability to get the local populations to cooperate. Buffer-zone forests were planted to provide firewood, reeds for thatch, and income for the local people, and these in turn have now become rhino habitat as well. More villagers were convinced when the natural riparian habitat fared well in the 1993 floods that wiped out whole villages in disturbed areas. Finally, ecotourism (not just by Westerners, but by the middle class in India) is providing substantial income to the local people of the region, so rhinos are worth more to them alive than dead.

Dinerstein discusses the implications of this success story for conservation efforts elsewhere, and clearly rejects attempts to capture rare animals (such as the Sumatran rhino) and maintain their populations by captive breeding. These policies failed, whereas the policy of maintaining large reserves of wild habitat protected from poachers and supported by the local populations is the only hope of keeping these rare but magnificent beasts alive and breeding in the wild.

DONALD R PROTHERO, *Geology, Occidental College, Los Angeles, California*

HISTORICAL BIOGEOGRAPHY: AN INTRODUCTION.

By Jorge V Crisci, Liliana Katinas, and Paula Posadas. Cambridge (Massachusetts): Harvard University Press. \$45.00. xi + 250 p; ill.; index. ISBN: 0-674-01059-0. 2003.

The authors of this volume view historical biogeography as the study of how processes, occurring over millions of years, influence the observed patterns of distribution. This is contrasted with ecological biogeography, where ecological processes acting over short periods of time effect present distributional patterns. Historical biogeography is in the midst of a revolution brought about by attempts to apply analytical, rather than narrative, methodology to the science, the full realization of the historical implications of plate tectonics, the increasing sophistication of phylogenetic theory, and the revolution in molecular biology. These are considered in terms of the space-time processes involved in the geographic distribution of organisms: dispersal, vicariance, and extinction.

Most of the volume is a compendium of historical biogeographic analytical techniques, with 31 noted as currently in use. Each technique is placed in context within ten chapters that cover such methods as those involved in center of origin and dispersal, phylogenetic biogeography, panbiogeography, and cladistic biogeography. Although pros and cons are explored for each, it is left to readers