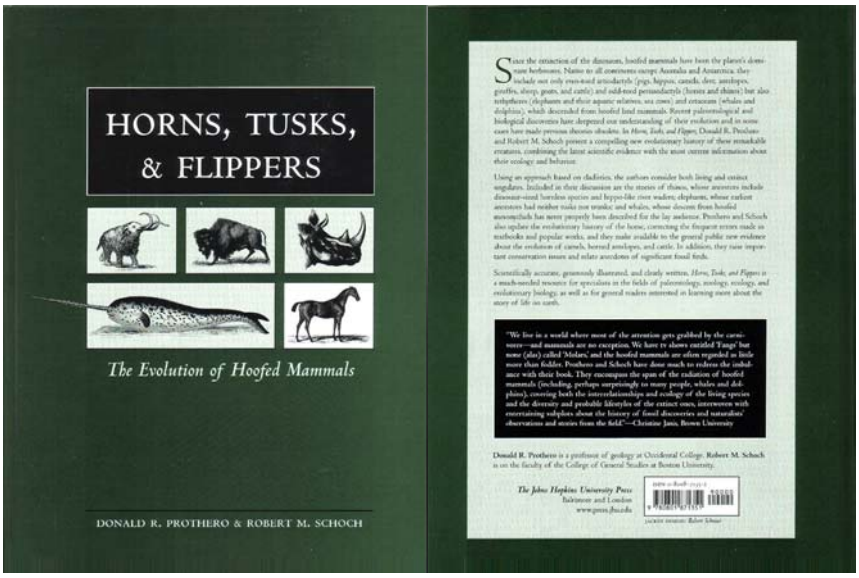
Prothero, D.R. & R.M. Schoch. 2003. Horns, tusks, and flippers. The evolution of hoofed mammals. – Baltimore, The Johns Hopkins University Press

Book review by J. de Vos



From the preface of Prothero & Schoch's book, 'Horns, tusks, and flippers. The evolution of hoofed mammals', we can learn that the book is based on the proceedings of the 'Workshop on the evolution of Perissodactyles' in 1989. These proceedings contained a lot of new information and the intention of the authors is to spread this information, scientifically up-to-date to the public, in which they succeeded very well. Within 15 chapters, including an introduction (chapter 1), they treated the pigs and hippopotami (chapter 2), tylopods (chapter 3), deer and antelopes (chapter 4), bovids (chapter 5), whales (chapter 6), the tethytheres (chapter 7), the early proboscideans (chapter 8), the recent elephants (chapter 9), the horses (chapter 10 and 11), the titannotheres (chapter 12), the tapirs and chalicotheres (chapter 13), the rhinoceroses without horns (chapter 14), and the horned rhinoceroses (chapter 15). Summing up these chapters does not do justice to the book because in reality there are three books in one; one about the phylogeny of the groups mentioned above, one about the history of the vertebrate palaeontology, and one about the biology, ecology and behaviour of mammals. But they are woven through each other in a perfect balance. Besides these topics, aspects of extinction, recent as well as in the past and nature conservation are discussed.

A very interesting thought is the comparison of the Miocene fauna of Nebraska, Kansas, and South Dakota with those of the African savannas (chapter 1, introduction). Although the faunas are different, similar mammals occupy the same niches, although they are not related. Seven million years ago in South Dakota we find creatures which are giraffe-like, pig-like, hippopotamus-like, elephant-like, horse-like, antelope-like, wild dog-like, cat-like etc.; in other words mimics of the recent mammals. But not only in North America; also in South America, Eurasia (for example Pikermi, the Mammoth steppe) we find this phenomenon.

The part on the history of vertebrate palaeontology presents such cases as the 'Cope-Marsh Wars': the fierce competition on who had the best fossils, who published the first, and who had priority over the new species. If necessary, these pioneers of vertebrate palaeontology antedated their papers to have priority over the other. The section also tells the story about the 'Nebraska Man', a molar that was first identified by Osborn as a molar of man, published in 1922 as *Hesperopithecus haroldcooki*. However, it turned out to be a molar of a peccary. Other cases are the find of *Samotherium* by Barnum Brown, one of the most famous fossil collectors. The history of the 'American incognitum' or the 'Great Missourium' find puzzled many people and doubt was raised whether it was still alive. The most famous find was a maxillary fragment from Hudson Valley in 1782. It was found by Indians and came in possession of Charles Wilson Peale, who made a drawing of it. According to the authors it was sold to a Dutch professor in 1787. Apparently, the authors did not know that this professor was the well-known Petrus Camper. Nowadays, the specimen is stored in Naturalis, the National Museum of Natural History, Leiden, The Netherlands. I realize that much of the American side of the story is covered in "American Monster" by Semonin in his recent book, but this side of the story, along with a more detailed and modern anatomical description of this tooth would be interesting to see… a paper for PalArch or the Newsletter? Consider it, I would certainly be interested in seeing a modern picture and/or illustration and description of this tooth. A cast of it would be treasured by most museums in the US, esp. the Smithsonian.

The specimen is from a mastodon. Another interesting story is about a molar found by Indians from the so-called 'Thunder Beast', which turned out to be a titanothere.

Also attention is paid to the biology, ecology and behaviour of the mammals. The phenomenon of the hindgut fermenters and the foregut fermenters is clearly explained. Of all recent animals there are only few lines off their biology. More or less a whole chapter (11) is dedicated to the recent horse *Equus*, the elephant (chapter 9) and tapir (half of chapter 13).

I can only be positive about the text, consisting of 311 pages. Nevertheless, the book has two shortcomings. The first is that the photographs and the drawings (generously illustrated with 254 figures) are sometimes of bad quality. That is pity for the book. The second remark is that the index is very short. For instance, if I want to find more information on *Myotragus* or *Hoplitomeryx* (both illustrated and discussed in the text), I have to go through the entire book, if I do not know that they belong to the bovids and the cervids, respectively. Nevertheless, the book reads like a storybook. The language is simple and understandable. It is a complete book, which is interesting for students of vertebrate palaeontology and other related fields, like zoology, biology and history of the vertebrate palaeontology, but is also for the layman. Highly recommended.

Prothero, D.R. & R.M. Schoch. 2003. Horns, tusks, and flippers. The evolution of hoofed mammals. – Baltimore, The Johns Hopkins University Press. 311 pp. ISBN 0-8018-7135-2. Price $ 69.95 (hardback).

Dr. J. de Vos
Vertebrate palaeontologist
Naturalis, National Museum of Natural History
P.O. Box 9517
2300 RA Leiden
The Netherlands
E-mail: vos@naturalis.nnm.nl