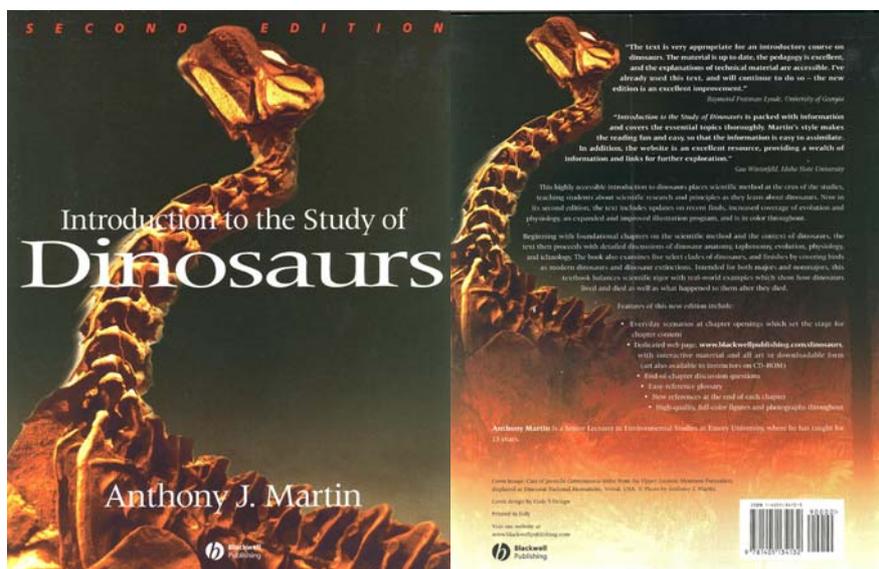


Martin, A.J. 2006. Introduction to the Study of Dinosaurs. Second Edition. – Oxford, Blackwell Publishing

Book review by J.W.F. Reumer



A heavy tome, this introduction to dinosaurs, 560 pages on thin paper weighing some 1.5 kilogram's. And worth every gram of it! It is a highly didactic work, written by an experienced teacher who not only introduces us to dinosaurology, but at the same time to science, scientific methods and a scientific way of thinking. Martin deliberately has that intention, as he explains in the preface. He seeks to show how science works, by constantly asking questions, so that in the end the students who use this book not only know enormously much about dinosaurs, but they also learn about chemistry, physics, mathematics, and how these branches of science can be called to help for better understanding palaeontology. I quite like this approach, as it proves that palaeontology is not just storytelling, but as much a science as are physics or astronomy.

The book contains sixteen chapters, dedicated to subjects such as 'Overview of Scientific Methods', 'History of Dinosaur Studies', 'Dinosaur Anatomy and Classification', 'Dinosaur Taphonomy', 'Dinosaur Physiology', 'Dinosaur Ichnology', in addition to chapters describing the various higher clades within the dinosaurs. It ends – of course – with a chapter on 'Dinosaur Extinctions'. All chapters end with three standard paragraphs: a summary, a list of discussion questions, and a bibliography. These paragraphs make the book extremely useable in teaching as they make the student think and they provide information for further reading if so desired.

The chapter I like most is the one on ichnology: dinosaur tracks, nests and eggs, coprolites and other traces of animal presence and/or activity. Martin illustrates his story with photographs from everyday life known to us all, and therefore very easy to understand. The footprints of a dog accidentally preserved in the concrete of a sidewalk at Emory University, Atlanta, Georgia – not by coincidence where Martin teaches. And the footprints of “a juvenile human female, weighing about 30 kg” (the author's daughter?) on a sandy beach, showing disappearing and re-appearing footprints due to differences in firmness of the sand. It is so easy to replace – in mind – the girl by a juvenile *Tyrannosaurus*, and then imagine what would happen to its footprints.

Also, Martin makes us do simple experiments. In Discussion Question 1 (p. 454) we are asked to go to a sandy area where the surface can be smoothed, and then perform five different locomotory behaviours:

- Walking around with your back parallel to the ground (stooped).
- Limping with an 'injured' right leg.
- Walking backward with your feet pointing in the same direction as when you walked forward.
- Running full speed across the sand.
- Walking on hands and knees.

Then, Martin asks: “what qualitative and quantitative differences did you see as a result of your experiments? Which results do you think would have low preservation potential, and why?” Such questions cover anatomy, biomechanics, behaviour, taphonomy and geology, and make an appeal to our imagination and capacity for logical reasoning. It is real science!

The book is copiously illustrated and is accompanied by a website (www.blackwellpublishing.com/dinosaurs) that we are invited to visit and use. All illustrations are available in

jpeg format and can be used for instructive purposes. Throughout the book dinosaur depictions are used as a sort of logo. A *Compsognathus* accompanies all 'Summary' boxes, a smiling *T. rex* adorns the 'Discussion Questions' sections, and a *Triceratops* indicates the introductory paragraph of each chapter. The latter is somewhat confusing. The introductions to the chapters on, e.g., Theropoda, Sauropodomorpha, Ornithopoda, Thyreophora, and Marginocephalia are all illustrated with the somewhat clumsily painted *Triceratops*, while this genus is certainly neither a Theropod nor a Sauropod.

'Introduction to the Study of Dinosaurs' is not a book that should be read and then put aside. It is a storehouse full of information and – perhaps even more important – full of ideas. The author is to be lauded for showing us so patiently how science works, and for illustrating his teachings of scientific methodology with one of the most fascinating branches of science: the study of dinosaurs. Anyone who teaches palaeontology should have this book within reach, if not for direct use, then at least for getting inspired.

Martin, A.J. 2006. Introduction to the Study of Dinosaurs. Second Edition. – Oxford, Blackwell Publishing. 560 pp. ISBN 1-4051-3413-5. Price £ 39.99/ \$ 81.95 (paperback).