# PREFACE

I am one of those kids who got hooked on dinosaurs at age four and never grew up. I knew I wanted to be a paleontologist as soon as I understood what the word meant. However, when I was a child in the 1950s and early 1960s, there was almost no dinosaur merchandise to buy—just a handful of kids' books and few plastic toys. One or two amateurish movies and TV shows had a few seconds of stop-motion Claymation dinosaur effects, advanced CG dinosaur movies certainly didn't exist in the 1950s or 1960s, and there were only a few sci-fi movies with crude stop-motion animation. Moreover, my classmates all through school did not seem interested in dinosaurs, and I was considered somewhat of a freak for knowing all those complex names. It was so unusual that they had me lecture the sixth graders about dinosaurs when I was only in fourth grade.

Today that has all changed. "Dinomania" has been growing since at least the late 1970s and 1980s, and it's difficult to pinpoint the specific cause. A huge media onslaught of dinosaurs exists today, and a gigantic array of dinosaur merchandise is available. Perhaps it was the effect of the "Dinosaur Renaissance" (chapter 17), which brought dinosaurs to life on more and more TV specials, that gradually got people interested. Certainly, by the time Michael Crichton's novel *Jurassic Park* hit the best-seller lists and the movie version blew away the box office records in 1993, a whole new generation of kids was fired up, most of whom are now just entering the profession of vertebrate paleontology. Whatever the reason, the norm these days is for most kids to go through a "dino phase" from ages 6 to 10; after that most of them gradually lose interest. Their hormones kick in,

and they focus on the opposite sex, sports, video games, and other high school obsessions.

This huge upsurge in interest has been a mixed blessing for vertebrate paleontology. We are certainly more popular and respected then when I was trying to make it into the profession, but the job market is still horrendous. With so many eager students now, only one in one hundred will land a job as a professional research paleontologist in a museum or university. Not only are jobs lacking, but there is little or no grant funding for all but a fortunate few. Most vertebrate paleontologists struggle to get field funds or even to pay for simple supplies for camping or prep work.

No jobs, no money, few chances to find funds to do much—it's not a pretty picture. But the profession chugs along, with hundreds of graduate students spending 10 years of their lives in college with no prospect of a job at the end of the line, and hundreds of scientific papers are published each year. A few of these discoveries are mentioned in the science media if they concern dinosaurs or other charismatic extinct beasts such as mammoths or saber-toothed cats. But as my graduate advisor, Malcolm McKenna, put it, "there are two types of people in paleontology: the rich and dedicated, and the poor and dedicated." Nobody goes into the field to get rich, that's for sure! A few of the leading members of the profession—Edward Drinker Cope, Henry Fairfield Osborn, Childs Frick, Wann Langston (and Malcolm McKenna)—came from wealthy families, but most do not. You either have money already and can afford to practice an esoteric profession that doesn't find oil or coal or make big money, or you do it because you love paleontology and wouldn't consider any other career despite the bad odds and poor pay.

I persisted through high school, college, and six years of graduate school at the American Museum of Natural History and Columbia University, the best place in the world to get the right background and connections in vertebrate paleontology at that time. Most graduate programs had terrible track records for placing their students, but nearly all of my classmates at the Columbia/American Museum program succeeded in getting good jobs. We had the best collection in the world to work from, and we were trained by the leading paleontologists in the world, particularly my advisor, Malcolm McKenna.

As an undergraduate working with Mike Woodburne at the University of California–Riverside, I realized there were far more opportunities to do many different kinds of interesting projects with fossil mammals than there were with dinosaurs. This remains true today, even though the number of

new dinosaur discoveries has skyrocketed. In addition, a lot of people are trying to study dinosaurs, so the field is very crowded. This is a big contrast with the available research opportunities in fossil mammals, with thousands of specimens available for study if you know where to look. I have done a few projects with dinosaurs here and there and tried to keep up with the incredible pace of new discoveries and new ideas, so I feel on top of most of the major developments over the past 50 years. I also started teaching a dinosaur course at the university level for the first time, which has brought me up to date much faster than anything else could.

After the great reception for my books *The Story of Life in 25 Fossils* and *The Story of the Earth in 25 Rocks*, I thought it was about time to do a dinosaur book using the same format. Each chapter focuses on a particular discovery or genus or specimen of scientific and historical significance, and it weaves a story around it of the interesting people who found it, what they thought, and a summary of what we now think about this or that dinosaur. Paleontology is replete with colorful characters and great human interest stories, from the eccentric William Buckland, to the nasty feud between Gideon Mantell and Richard Owen, to the Bone Wars between Edward Drinker Cope and Othniel Charles Marsh, to the aristocratic Henry Fairfield Osborn or the humble Walter Granger, or to the legendary collectors José Bonaparte and Barnum Brown, or the wild gay Transylvanian Baron Franz Nopcsa, who tried to become king of Albania.

The book is organized into four sections. The first section, "In the Beginning," talks about the first discoveries of dinosaurs in England and elsewhere (*Megalosaurus, Iguanodon, Cetiosaurus*, and *Hadrosaurus*) and describes the earliest ancestors of the dinosaurs such as *Eoraptor*. The second, "The Long-Necked Giants," reviews the major types of sauropods, the largest land animals that ever lived. The third section, "Red in Tooth and Claw," surveys the predatory theropods from their earliest forms to their most bizarre forms, including birds and the weird herbivorous therizinosaurs and ornithomimids. The final section, "Horns and Spikes and Armor and Duck Beaks," looks at the herbivorous ornithischians and their wide variety of armor, spikes, horns, frills, and crests.

I hope you enjoy this grand tour through the dinosaurs and come to know some of the interesting people who found them. Their stories and the (sometimes horrible) conditions they endured in pursuit of this knowledge are sure to amaze you.