

Preface

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WITH CONTRIBUTIONS FROM JAMES S. MELLET

The papers in this volume are united not by common subject but by shared inspiration—Malcolm Carnegie McKenna, a curator of vertebrate paleontology at the American Museum of Natural History and professor of geology at Columbia University for 41 years.

In 1960, Malcolm McKenna arrived at the American Museum as an Assistant Curator to replace George Simpson in the Department of Vertebrate Paleontology. At the same time he accepted an invitation to teach at Columbia University, where Simpson, Ned Colbert, and Bobb Schaeffer had established a graduate program in vertebrate paleontology. Malcolm's first students were inherited from Simpson. By the time he retired in 2001, he had served as advisor to 34 successful Ph.D. students in the joint Columbia University–American Museum of Natural History program. The contributors to this volume were Malcolm's students.

Malcolm summed up his teaching philosophy in his acceptance for the Romer-Simpson Medal of the Society of Vertebrate Paleontology in 2001. "I've always been reluctant to assign projects, because if one has to tell grad students what to do, then they really aren't ready to be PhDs." Jim Mellett, one of Malcolm's early students, noted that Malcolm "would point you in a general direction and then turn you loose. He didn't create a professional dynasty by parceling out small research projects that he wanted done, but was happy to have his students explore paleontology on their own. If you came into his office with an outrageous observation . . . he would not reject it but would cheer you on." Malcolm always afforded his students the opportunity to think outside of the box and to learn the "process of science" by trial and error.

Malcolm has often said, "teaching is one thing; learning is another. If you can get the students fired up to learn, you don't have to teach." As those who have taken his fossil mammal course well know, Malcolm was not traditional in his approach to teaching. His idea of class was to trudge down the hall with a 40-lb. stack of 10 (ancient) books that he expected his students to read for the following week's class. After a brief discussion about whatever happened to be on his mind that day he would vanish into his office to work on one of his myriad projects. Where Malcolm excelled was in his never-ending enthusiasm to discuss any topic, at almost any time, or to explore the collections with a student who hazarded a question.

Malcolm insisted that his students get a broad background in other aspects of science. It was important that they learn how to find new fossils and Malcolm was especially proud of the ones who were successful in this endeavor. Fieldwork, Malcolm's greatest passion, was mandatory. Not only

was it a way to find new fossils and to learn geology, it was his litmus test. As Jim Mellett relates, “A few times Malcolm left me in charge of the field operations. . . . Being in charge meant I held the purse strings, and I developed a knack for getting Malcolm to spend money. While doing fieldwork at Four Mile, I watched the toll the manual labor was having on the crew and decided to mechanize our quarry operations. I rented a Bobcat (a small excavator) for a week. . . . Our productivity went up dramatically, and the physical strain on the crew melted away. On the other hand, I had spent a lot of field money on the rental and began to worry that I had overreached. When Malcolm returned, he couldn’t miss seeing the Bobcat parked on the ridge at the quarry, but he didn’t let on and everyone in the crew played dumb. When we were alone, I nervously hemmed and harrumphed as I explained what I had done, and why. When I finished, he just smiled and said it was a good move on my part, so much so that he decided to buy the Museum a Bobcat for the next season. That was the kind of person Malcolm was; if you were left in charge, you were in charge and he didn’t second-guess your decisions.”

This volume includes papers from 20 of Malcolm’s former students, including one of his earliest (Leigh Van Valen) and his two latest (Jonathan Geisler and Tom Rothwell). A wide range of research topics is represented and is a reflection of the rich collections of vertebrate fossils at the American Museum and the opportunities for field work in the western United States, South America, and Mongolia made available to American Museum–Columbia University students. It also points to Malcolm’s encouragement of his students’ individual interests and to his own curiosity and breadth of knowledge.

Marjorie Coombs found a treasure trove of chalicotheres specimens in the Frick Collection that provided the subject of her dissertation as well as a focus of research in the following years; her paper on *Moropus merriami* is the latest installment. Frick carnivores have provided Bob Hunt with research topics since his graduate school days; in his contribution he applies his knowledge of Cenozoic carnivores to a study of the impact of global climate on carnivore evolution. While a graduate student, Bob Emry discovered the first known North American pangolin in the Frick Collection; here Bob supplements his earlier description of that new taxon. Tom Rothwell describes the first large early Miocene felid material known from Asia, discovered among the fossils collected by Malcolm and crew in the 1990s at Ulaan Tolgoi, Mongolia. Jonathan Geisler worked with Malcolm in Mongolia for a summer; he reports on humeri of *Oligoscalops* from Hsanda Gol, the first specimens of that genus known from Asia. Both John Flynn and Andy Wyss worked with Malcolm in the Chilean Andes; their description of a new species of polydolopine marsupial from a new Chilean locality discovered by the authors in 1996 illustrates their continuing involvement in that region. Tom Rich and Pat Vickers-Rich were introduced to the Cretaceous fauna when, as students, they worked at Como Bluff, Wyoming. They went on to discover new localities of that age in Australia and report here on taxa from two sites in Victoria. Rich Cifelli, who credits Malcolm with turning his interest to Mesozoic mammals, describes new marsupials

discovered by quarrying and screening a mid-Cretaceous site in Utah. George Engelmann presents new multituberculate dental material, recovered by hand quarrying and screen washing a late Jurassic site in Utah, that may provide insights into the early history of that group.

Jin Meng, in writing on the phylogeny of Glires, and Leigh Van Valen, in his discussion of the origin of rodents, pose questions on subjects that have intrigued Malcolm for decades. Alex Kellner and Marc Carrasco were encouraged to pursue their special interests in Brazilian pterodactyloid pterosaurs and the application of statistical techniques to the study of rodent teeth, respectively, and their contributions to this volume reflect their continuing involvement in those pursuits. Both Sherri Gabbert and Bob Evander make available studies stemming from their dissertation work. Sherri describes toxodontian cranial anatomy, presenting new identifications and interpretations that will be helpful in future studies of this group. Bob publishes his response to a challenge by Malcolm to provide a revision of horse tooth nomenclature. Malcolm's interdisciplinary approach is highlighted by Don Prothero's account of his contributions to the development of the North American mammalian time scale. Gina C. Gould and Bruce J. MacFadden challenge dogma in suggesting that "Cope's rule" is not applicable to the evolution of Varanidae and Equidae.

Malcolm has been quoted as saying, "If you asked me what my main legacy might well be here [at the AMNH], I would point to them [my graduate students] as a big chunk of that legacy. Students are a tremendous source of inspiration for the professors. We all learn together."

It is in honor of Malcolm C. McKenna, teacher, exemplar, colleague, and friend that we dedicate this volume.

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