



A student of everything: Richard L. Cifelli's broad influence on mammalian paleontology and beyond

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Even those of us who are fortunate enough to call Rich Cifelli a close friend are regularly astonished by his acumen as a scholar, an intellectual, and a craftsman. We couldn't be more pleased to offer the enclosed collection of papers in honor of Rich's long career. The reader will see a variety of subfields of paleontology represented here which, we feel, is a fitting reflection of Rich's wide-ranging curiosity and broad scientific impact. We thank all the contributing authors and especially the editors of *Acta Palaeontologica Polonica* for their hard work to make this special issue possible.

Rich attended Colby College, a small liberal arts school in Maine, from which he embarked on a number of adventures (from Kenya, where he had a run-in with malaria, to the Alaskan bush, where he would cross a sow grizzly). He was nearly lost to anthropology at the University of Chicago, where he would have been just as successful. Fortunately for our discipline, Rich ended up studying under Malcolm McKenna at the American Museum of Natural History for his doctoral work at Columbia University. Much of his early scientific efforts became focused on the study of South American native ungulates.

After he earned his Ph.D. in 1983, Rich held a brief postdoctoral position at the Smithsonian Institution where another Richard Cifelli, his father, was a curator at the National Museum of Natural History and a major figure in the field of fossil plankton, especially foraminifera. During that summer, Rich found fragments of mammals in the Cretaceous rocks of southern Utah that would launch decades of work, transforming our understanding of mammal evolution during the Mesozoic. After a few years in nearby Flagstaff at the Museum of Northern Arizona, Rich joined the University of Oklahoma in 1986 as faculty in the Department of Zoology and a curator of the vertebrate paleontology collection (at the time the Oklahoma Museum of Natural History, now called the Sam Noble Museum). He oversaw the move of the collections into a state-of-the-art building and was personally responsible for massive additions of specimens, particularly from the Cretaceous of the US Western Interior. Thanks to Rich's tireless fieldwork efforts through his tenure of 34 years, the OMNH now houses one of the most important Mesozoic mammal collections in the world.



Richard L. Cifelli in the Upper Jurassic Morrison Formation of eastern Utah, June, 2017.

Although Rich first came to prominence working on fossil mammals and cemented his reputation elucidating the deep evolutionary history of our clade, his interests and expertise ranged far beyond. Over his career he also published on lungfish, labyrinthodont amphibians, basal amniotes from Permian fissure fills, theropod, sauropod, and ceratopsian dinosaurs from the Lower Cretaceous, early turtles, lizards, snakes, and crocodylians, Cenozoic mammals from several continents and from the Paleocene to the Pleistocene, ostracod crustaceans, stratigraphy, and biogeochemistry; this list is illustrative but not exhaustive. Rich held a joint faculty appointment in the School of Geosciences and through the close ties between the vertebrate and invertebrate paleontology divisions at the OMNH he mentored students of all levels across most paleontological disciplines. Importantly, he always encouraged students to participate in fieldwork as part of their training.

The operations of fieldwork is an area where Rich has made enormous contributions. He revolutionized the collecting, processing, and curation of microvertebrate fossils through his development of bulk-sampling and screenwashing techniques, using equipment of his own design. Cifelli field camps were historically primitive yet self-sufficient; propane was a rather late addition to supplement wood cooking fires, while a gas-powered water pump was always hum-

ming nearby to fill home-fabricated metal tanks used to reduce matrix in the field. Rich blazed trails into places where no one had looked for small vertebrates before and discovered important fossils where others had failed. Part of Rich's success came from the informal ease he has when talking with landowners, a major logistical component to fieldwork in the American West. Rich is an everyman, and the facility with which he can talk to a rancher about tractor engines, big game hunting, or salvaging barn wood has earned him trust and friendship: he knows a lot about all these things, has bloodied his knuckles on them, and one is unlikely to find a subject with which Rich isn't at least conversant, if not fluent. Through all this he is disarmingly funny, and his practical jokes (played mostly in field camp though often in the museum) are memorable, for better or worse.

Whether history, science, or baseball, Rich remembers everything he has ever read or seen and he has earned a reputation for being cautiously thoughtful with his interpretations. If you hear it from Rich Cifelli, you know without a shred of doubt that you can trust it completely. He has always been generous with his time and access to specimens especially towards students and non-native English speakers. Those of us who were fortunate enough to study under him all remember times that he dropped everything to guide us through a rough patch when we were first starting out—the import of which would only become clear much later, as the full scope of Rich's activities and responsibilities dawned on us. Rich led us by example, to be endlessly curious, to throw ourselves wholeheartedly into research, to be fair and courteous to colleagues, to think clearly and to write incisively; all worthy goals, even if we are still striving for Cifelli-level mastery.

In the late 1990s Rich developed a friendship and close working relationship with the late Professor Zofia Kielan-Jaworowska from the Polish Academy of Sciences. With their friend and colleague Zhe-Xi Luo (now at the University of Chicago), they wrote *Mammals from the Age of Dinosaurs* (2004, Columbia University Press), the most important single work on the subject in a generation. In addition to his own tremendous scholarly output (he has authored more than 150 papers), Rich has leveraged his command of language behind the scenes as a masterful editor

for most of the major journals in our field. Rich would step in as editor of *Acta Palaeontologica Polonica* when Prof. Kielan-Jaworowska retired from this position in 2007, making this journal an obvious venue for celebrating his career. Rich was honored with the Gregory Award by the Society of Vertebrate Paleontology in 2016 for outstanding service to the vertebrate paleontology community.

While Rich officially retired from the OMNH in the fall of 2020, he has remained an active collaborator with many of the individuals involved in the creation of this special issue. Rich could have comfortably and authoritatively made significant contributions as a co-author to any of the papers in this collection; in fact, he no doubt had a hand in the beginnings of several whether through field work or direct mentoring and discussion of ideas. Given this, we are guilty of having robbed him of a bit of professional credit but with honorable intentions, and we trust he will forgive us. This collection of papers reflects the expanse of Rich's influence: detailed morphological descriptions and alpha taxonomy, functional morphology, stratigraphy, geochemistry, and collection techniques. The breadth of vertebrate groups represented here reflects his long tenure over the diverse and important collections at the OMNH, and a substantial portion of the specimens described in these papers are from that collection.

The term “omnologist” is one Rich has casually bestowed upon students, typically young ones, whom he wanted to praise for their curiosity and knack for picking up technical concepts; he is fond of colloquialisms, and in this context would just as readily employ “smarter than a tree full of owls”. We feel no term better embodies Rich: a “student of everything”. Beyond his raw intellect and mastery of vocational and avocational pursuits, it is his endless curiosity and the fruits it bears that have been so inspiring and have led to his lasting impacts on the field, on his students, and on his friends. We look forward to many more years of field camp discussions of metal fabrication, literature, one-liners and, of course, mammal morphology.

Reference

Kielan-Jaworowska, Z. Cifelli, R.L. and Luo, Z.-X. 2004. *Mammals from the Age of Dinosaurs*. 630 pp. Columbia University Press, New York.

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