

# In Memoriam

## Allan J. Baker

*Oliver Haddrath, Cathy Dutton  
and Mark K. Peck*

**Allan John Baker** passed away unexpectedly on 20 November 2014. He had worked for over 42 years at the Royal Ontario Museum (ROM) as a Curator in the Department of Ornithology and was Senior Curator at the time of his death. He also served as Head and Vice President of the Department of Natural History from 2004 through 2014.

Allan was born in Westport on the South Island, New Zealand, in July 1943. It was during his childhood spent on a farm near the coast that his interest in natural history, and particularly birds, was kindled. Some evenings he could hear kiwis calling in the darkness and he was also a keen observer of the nearby shorebird colonies. Both the kiwis and the shorebirds would later factor highly into his life's work.

After he earned his undergraduate degree, he went to teacher's college where he met his wife Sue. He began work as a high school teacher in 1965, but returned to the University of Canterbury to earn his MSc, followed by his PhD, on the systematics and evolution of oystercatchers in 1972. Upon receiving his

doctorate, he was hired as an Assistant Curator in the Department of Ornithology at the ROM. He, Sue and their very young son, Daniel, packed up and moved to Toronto. Their second son, Ben, was born in Canada a few years later.

Allan's early research and publications focused on oystercatchers, but he soon diversified, expanding his research program to studying evolutionary changes in introduced species throughout the world. While he brought an international scope to the programs carried out in the ornithology department, he was also interested in questions dealing with species in his adopted land. Among some of his studies, he helped clarify the evolutionary relationships between the different subspecies of Canada Geese (*Branta canadensis*). He was always innovative, embracing new tools and techniques that could help shed light on the evolutionary history of birds. In the 1970s, the tools available for the study of museum specimens were limited and largely relied upon direct measurements of birds, or examining variation in size and structure.



Allan Baker holding a moa leg bone in New Zealand, 1994. *Photo by Oliver Haddrath.*

By the 1980s, new research methods were becoming available and he was quick to use these approaches. Examining cultural inheritance of bird song, and employing new molecular tools that looked beyond the phenotype to the genetic makeup (genotype) of the bird were among these methods.

Allan initiated the ROM Ornithology frozen tissue collections, changing the emphasis from collecting whole birds to collecting a blood sample and releasing the birds back into the wild. He recognized that many of the evolutionary questions he was asking could be answered with the wealth of information provided in DNA. This collection would also prove to be an important resource in his future conservation efforts. He was also actively involved in many aspects of museum curation. He initiated the database cataloguing of the various Ornithology collections, secured grants to establish a world-class molecular genetics laboratory at ROM, and was co-lead on the development and installation of the ROM Evolution Gallery.

As well as being a Curator at the ROM, he was also cross-appointed as a Professor at the University of Toronto, teaching courses from introductory biology to advanced graduate classes. Over his teaching career, he helped to shape the minds of multiple generations of young ornithologists, naturalists and evolutionary biologists. He did this not only in the classroom, but also in his own laboratory, where he supervised and mentored over 30 graduate students. There was also a constant stream of international students coming to learn the latest

techniques and applying them to their own research projects.

With an expanding lab and cutting edge technology, it was not long before Allan's expertise was being sought to help with external projects. His conservation genetics research continued in the early 1990s with the genetic examination of the Yellow-eyed Penguin (*Megadyptes antipodes*), the world's rarest penguin species, whose populations were suffering predation from introduced mammals in New Zealand. Allan used his molecular skills and knowledge to assess the population dynamics of these birds and to understand their dispersal, allowing for a more informed management strategy. In a similar way, he helped with kiwi conservation by using DNA sequencing to show the three recognized species of kiwi were in fact, five species, a key piece of information that impacted species management, recovery plans and captive breeding programs.

Allan also worked on a number of other collaborative conservation projects both within Canada and internationally. Over the last twenty years, he has had a special interest in the conservation of shorebirds, in particular the *rufa* subspecies of the Red Knot (*Calidris canutus*) in North America that has undergone a dramatic population decline that began in the 1990s. He and his students used molecular resources to answer questions surrounding the genetic diversity and evolutionary history of the Red Knot. In addition, he co-founded the Global Flyway Network, a collaboration of scientists and ornithological enthusiasts who provide an early warning service

for identifying migratory shorebirds at risk. He also helped organize and coordinate international teams of shorebird researchers from Argentina to the Canadian Arctic. This research on Red Knots helped to have it designated as a species at risk in Canada and the United States.

Alongside his conservation work, Allan carried out research addressing the fundamentals of bird diversity. He was involved with helping to build the avian tree of life, sequencing DNA from different bird species to help resolve avian relationships. This also involved trying to work out when these different bird lineages originated, which touches on one of the controversies of the bird world: how old are modern birds and what events shaped their modern radiation? He also co-chaired the All Birds Barcoding Initiative (ABBI) Steering Committee, whose aim is to identify all of the more than 10,000 species of birds in the world using a unique DNA sequence from the COI gene.

He received several distinguished awards during his career, including the Doris Huestis Speirs Award for Outstanding Contributions to Canadian Ornithology, presented in 2006 by the Society of Canadian Ornithologists, and the William Brewster Memorial award in 2007, presented by the American Ornithologists' Union for his outstanding and influential work in avian molecular evolution. He was made a fellow of the American Ornithologists' Union in 1988, and served as an editor or member of the editorial Board for such publications as *Systematic Biology*, *BMC Evolutionary Biology*, and *The Auk*. He was

co-convenor for Symposium 22 "The Avian Tree of Life" at the XXV International Ornithological Congress.

While Allan enjoyed working in the museum on the questions surrounding birds, he loved to get out into the field and study them directly and in doing so visited many countries around the world. It was often on these trips that his true mischievous sense of humour would come out and field trips always resulted in many fun and entertaining stories.

Allan had a passion for life, his work and birds. He will be missed by those whose life he has influenced, and there have been a great many. His legacy will live on with the continuation of the initiatives he began, the ROM Ornithology collections, and in the spirit of scientific curiosity he has inspired in his students.

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