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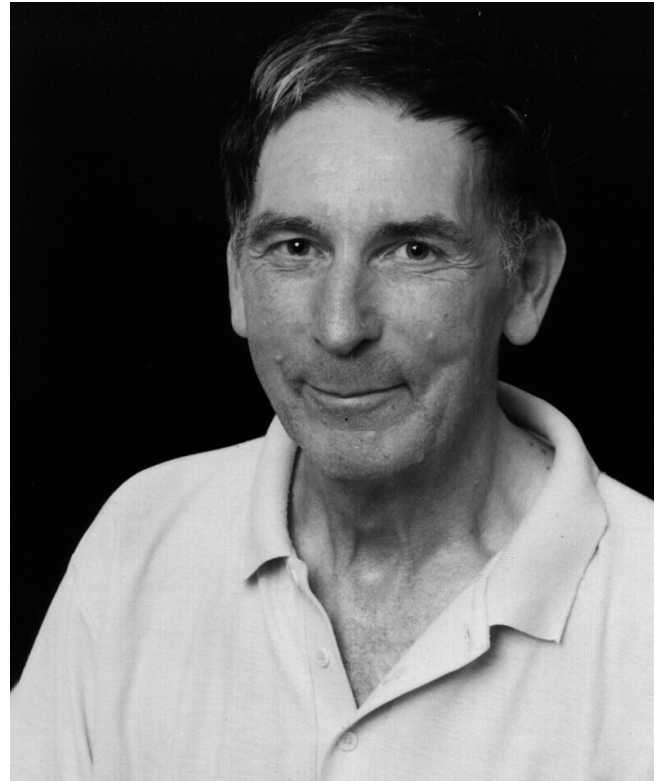
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PROFESSOR J. MICHAEL (MIKE) CULLEN
1927–2001

On 23 March 2001, Professor John Michael Cullen, known to all as 'Mike', died in a car accident on his way to Monash University, where he had held one of the Chairs of Zoology from 1976 until his retirement in 1992. Mike, an outstanding contributor to the development of ethology and ornithology, was born in Bournemouth, England, on 14 December 1927 and spent his first six years in India where his father worked for the Bombay Company. At seven, Mike and his younger sister were sent back to England by boat and cared for by a great aunt. In 1940 they returned to India to escape the war and Mike entered Acheson College in Lahore. During this time he was introduced to bird-watching by his father while on holiday in Kashmir and the two subsequently competed with their species lists. Two years later he moved back to England, this time to escape the advancing Japanese army. Once there, he developed his passion for mathematics at Marlborough College in Wiltshire, played rugby in the first XV and watched birds, often along the Kennet and Avon Canal. After two years' military service, Mike entered Wadham College, Oxford University, to read mathematics.

In his undergraduate years, during which he changed to study zoology, Mike spent some time at the nearby Edward Grey Institute for Ornithology where he found encouragement for his first ornithological project on the ecology of Marsh Tits. He remembered fondly that the then head of the Institute, David Lack, once told him that all that is required for good field research is 'a note-book and a bicycle'. Of much greater significance in shaping his future was a series of lectures given at the Institute by the newly arrived Dutchman Niko Tinbergen. Tinbergen had moved to Oxford to set up the Animal Behaviour Research Group and is regarded, together with Konrad Lorenz, with whom he shared the Nobel Prize in 1973, as one of the founders of ethology. Mike obtained a first-class degree, was awarded a Christopher Welch scholarship and began a Doctor of Philosophy with Tinbergen on the behaviour of the Arctic Tern on the Farne Isles off the coast of Northumberland. The now widely-used term 'allopreening', to describe mutual preening behaviour, was created by Mike at this stage, and, later, he was bemused that his companion term 'autopreening' never gained the same universal acceptance in ornithology. Another scientist in Tinbergen's Group was Dr Esther Sager, visiting from Switzerland. She also worked on the Farne Islands and was studying the behaviour of Kittiwakes. Esther and Mike married in 1953 and subsequently had two children (before separating amicably in 1980). They stayed in Oxford and Mike was Tinbergen's right-hand man at the Animal Behaviour Group from 1956 to 1968.

This period at Oxford was an easily definable part of Mike's life when he had a significant and lasting influence in zoology. Tinbergen was a brilliant man who emphasised the



need for objective descriptions of animal behaviour in natural or semi-natural settings, but it was Mike who provided the mathematical expertise that Tinbergen almost totally lacked. Tinbergen said later that in their time together he learned more from Mike Cullen than *vice versa*. Mike's mathematical expertise was crucial to the development of ethology into the quantitative and experimental discipline that it became. His tremendous enthusiasm for research, coupled with his analytical mind and mathematical skills put him in high demand, not just with the ethologists at the Animal Behaviour Group, but also with the ornithologists at the Edward Grey Institute and the ecologists at the Bureau of Animal Populations. He devoted considerable energy then, and later, to attending and participating in seminars and his positive, probing inquiries altered the course of many an investigation. One of his delightful eccentricities in later years was to use binoculars in seminars to read the fine detail of tables and graphs. His legacy from this period of his life is not well heralded by numerous publications (as he usually declined co-authorship even when his contribution was paramount), but rather through the general recognition of his colleagues and students in his role in the shaping of the discipline of ethology and their thinking, research and careers.

In 1968, he became a lecturer in experimental psychology and a fellow of Wadham College, and when Tinbergen retired in 1974 many believed Mike to be his natural successor for the Chair of Animal Behaviour at Oxford. However, his

modest number of publications, rather than his recognised substantial influence on an emerging branch of science, appears to have been held against him. About this time, Monash University in Melbourne had established a second Chair in Zoology and Mike was offered this position in 1975 and started there in early 1976. He became involved immediately in the projects of colleagues and in the encouragement and supervision of students, many of whom now play important roles in academia, research and wildlife management in Australia and overseas.

Mike contributed to the ornithological fabric in Australia in many ways. He was on an advisory committee to a Federal Senate Investigation of Christmas Island guano mining and the future of the rare Abbott's Booby and supervised the studies of distribution and breeding there from 1979 to 1985. He also did consultancy work for the Federal Government on the effects of tourism on penguins at Bowen Island in Jervis Bay. He served on the Royal Australasian Ornithologists Union Field Investigation Committee (later known as the Research Committee) from 1976 to 1988. He was also the organiser of the 'Rolling Bird Survey' and secretary of the Victorian Group of the RAOU in 1983–84. However, he made his most conspicuous contribution to ornithology in this phase of his professional life through his association with Little Penguins, particularly at Phillip Island and on the St Kilda breakwater near Melbourne.

Mike first became involved in penguins at Phillip Island in October 1976 when he spent a weekend banding penguins on Phillip Island with the Penguin Study Group led by Pauline Reilly. In her 1983 book on penguins at Phillip Island, *Fairy Penguins and Earthy People* (Lothian, Melbourne), Pauline remarks on the Group's good fortune in securing his interest and involvement, and his infinite patience in explaining statistics and techniques for data analyses. Their collaboration resulted in the publication of four substantial papers on the biology of Little Penguins in *The Emu* and began Mike's 25-year involvement with penguins, both directly at Phillip Island and St Kilda and indirectly, through the studies of various students.

Mike was instrumental in establishing a scientific advisory committee at the Phillip Island Penguin Reserve, home to the famous 'Penguin Parade', and served on it from 1980 until his death, as chairman between 1980 and 1999. As a result of the efforts of the scientific advisory committee, a permanent full-time research group was established at Phillip Island with strong links to the (then) Department of Zoology at Monash University. He was also on the Phillip Island Nature Park Board of Management and attended monthly meetings from 1985 until 1999. At St Kilda, he visited the colony 250 times between 1986 and 1998 and his study was the catalyst for the formation of Earthcare St Kilda and the proclamation of the breakwater and surrounds as a Co-operative Management Area for wildlife protection. He

derived a great deal of satisfaction from his involvement with penguins and considered the development and application of scientific research to the appropriate management of Little Penguins one of his greatest achievements.

Mike was happiest when he was presented with unanalysed data and questions to answer. The common point of most of his scientific collaborations was that it was he that found a pattern in the data or proved the point to be made in the analyses. He would listen attentively to the details of how the data were collected, explore the purpose of the analysis and ask a few questions. At a later stage there would be a phone call late at night or on a Sunday morning, with Mike's voice announcing, sometimes incredulously, often excitedly, the results of a just-completed analysis. An elegant mathematical model would follow, handwritten on a scrap of paper, forwarded by fax and annotated by a later email. Sometimes it was apparent that he must have worked through the night.

Mike was very loyal to his friends and extended friendship in his very unassuming way. His concern for the personal well-being of friends and colleagues will also be remembered. His zest for life was great and he was known for his fire-eating trick at parties, his knitting at professorial meetings and his mischievous sense of humour. Curiosity led Mike to try out things on himself, such as tasting wild foods and the use of non-reflective colours in reducing glare. He once discussed the possibility of trying out an injected transponder on himself before they were used on penguins. It is not known if he did.

As his advancing Parkinson's Disease became more evident, Mike relinquished some of his responsibilities but his *joie de vivre* rarely faltered and he acted as if it was a minor inconvenience while he continued to achieve much. His talk on pair-bond in Little Penguins was one of the highlights at the Fourth International Penguin Conference in Chile in September 2000. On the day he passed away, he was working on a model for the first arrival of penguins back at their natal colony on Phillip Island.

Mike is survived by his children, Tamsin and Jeremy, two grandchildren and his partner of 16 years, Rita Kryshkovski.

Mike Cullen had a major influence on the development of ethology — the study of animal behaviour — on a generation of Australian ornithologists and on the study of Little Penguins. His enthusiasm for the truth and generosity of spirit were exceptional and infected those around him, while his modesty and demeanour surprised most. He put the interests of others and science ahead of his own throughout his career and his ease with mathematics permeated his enormous influence on zoology for more than 50 years. It has been a rare privilege, a pleasure and an inspiration to have known and worked with Mike. His contribution to ornithology in Australia and to ethology will last well beyond his time.

Peter Dann