

## Commentary

### Ernst Mayr – teacher, mentor, friend

Numerous articles and, later, memorials have appeared on the occasion of Ernst Mayr's 100th birthday on 4 July 2004 and following his death on 3 February 2005, respectively (Bock 2004, 2005; Bock and Lein 2005). They deal with his accomplishments as an ornithologist, systematist, evolutionist, and historian and philosopher of biology. A book-length biography is close to completion (Haffer J, *Ornithology, Evolution and Philosophy: The life and science of Ernst Mayr, 1904–2005*). Hence, rather than dwelling on his important accomplishments in these diverse fields and writing about his overall personality, such as his great generosity and his driving enthusiasm for his work until the last year of his life, I would like to present a picture of Ernst Mayr as a teacher, mentor, and friend from a very personal view point.

Because I lived in New York City, I was able to complete most of the summer practice requirement for the B.S. degree at Cornell University's School of Agriculture in the Department of Ornithology at the American Museum of Natural History (AMNH) in the early 1950's. This was still within the golden period of the bird department and was as close as possible to being in paradise for a young student interested in avian systematics and evolution. A number of tasks were set for me by several of the curators allowing me to learn the rudiments of museum work, and I had the vast collection to explore to my heart's content. Most important was that I met Ernst Mayr in August 1953 just before he left New York and the museum for his new position at the Museum of Comparative Zoology (MCZ) at Harvard University in Cambridge, Massachusetts. This date is significant as it marks the change in Mayr's career from mainly empirical research in avian systematics to more theoretical work in evolutionary biology and, finally, in the history and philosophy of science. My interactions with him while he was still at the American Museum were few, but I can remember well that he came back to the room in which I was working one afternoon and asked whether I would like to come with him to watch a recent film on birds, which he was reviewing for a possible showing at a scientific meeting. I do not recall the contents of the film, but I recall Mayr's thoughtfulness in asking me to accompany him.

At the end of the summer of 1954, when I was pondering schools for graduate study, I waited at the AMNH as long as possible before returning to college that fall because I was told that Ernst Mayr would be at the museum for a few days on his way back from Europe to Cambridge, Massachusetts; I waited to ask his advice about possible graduate schools. At one point during our conversation, he asked whether I had considered Harvard University. I had not. He then asked whether I could provide him with a copy of my college record so that he could enquire about my chances of being accepted. I sent this material and he informed me that I would almost certainly be accepted if I applied. I did so, was accepted and started a half-century close association with Ernst Mayr.

Few people know that Ernst Mayr maintained an interest in sports. He followed the international football (i.e. soccer) results to the end of his life; this was a holdover from his early years in Germany. And he had a general interest in American baseball, especially the teams in New York, from his two decades of living there. For some reason which I have forgotten completely by now, I was in his Cambridge home on October 4, 1955, when we heard on the radio that the Brooklyn Dodgers had defeated the New York Yankees in the seventh game of the World Series and took the title of world baseball champions. Mayr insisted that we stop whatever we were doing and immediately toast the Dodgers' first winning of the World Series.

Interactions of different students with the same professor can vary greatly, but Ernst Mayr and I clicked very well with each other from the very beginning. I was able to complete the generic revision of the herons and egrets (Ardeidae) that I started at the AMNH while an undergraduate student (Bock 1956), and he suggested several other problems in avian anatomy and evolution to me. I was kept so busy with these other projects that Professor Mayr had to ask a number of times how I was doing on my actual thesis research. I finally made a decision on a thesis topic which combined cranial mor-

phology and systematics of the passerine birds. Mayr accepted this thesis topic, showing again that he was most concerned with correct observations and interpretations rather than who made them, because this thesis (Bock 1960) demonstrated the erroneousness of major anatomical observations and, hence, of the resulting taxonomic conclusions in an earlier paper that Mayr (1955) had just proclaimed as excellent and certain to be substantiated by future studies.

Mayr was a teacher, through and through, from his first days at the AMNH. There he gathered a group of young bird watchers in the New York City area for seminars and discussion of the literature, as well as directing them in a series of projects, both in the field and in the museum. He continued these seminars at Harvard with the major goal of teaching the students to think independently and not to accept statements simply because they were in the literature or uttered by a professor. He was always more than happy to discuss ideas and problems with students, but the student had to be sure of the facts and the resulting conclusions. Not many students dared to argue with him, much to his disappointment. He told me one day rather sadly that his “bark was worse than his bite”, hoping that more students would discuss problems critically with him.

We students learned gradually, and often in unexpected ways, of some of Mayr's accomplishments. One of these was revealed during an evening when a group was invited to his house to meet Professor A J “Jock” Marshall who was visiting for a few days. Suddenly at one point, Mayr and Marshall started to converse in pidgin English which Mayr had learned 30 years earlier while on his expedition to New Guinea and had little opportunity to use since then.

Mayr was an excellent story teller, including stories about himself. When he was in New Guinea in 1928, he read in his almanac that there was to be a partial eclipse of the moon a few days hence. He learned the myths of his Malaysian assistants about eclipses, but could get no reaction from the local natives. Hence during the eclipse, he pointed it out to the natives and, still getting no reaction, he acted in a more and more excited manner, hoping that this strategy would work in getting some reactions from his hosts at last. Finally one of the village elders put his arm on Mayr's shoulder in a fatherly way and said: ‘Young man, there is no need to get so excited. The moon will come back’.

Mayr also entertained my wife and me on a drive back from his country home on the details of how he discovered that a German officer, Hermann Detzner, falsified his entire story in his 1921 book ‘*Four Years Among Cannibals*’ on how he eluded the Australians in German New Guinea during World War One, and of the elaborate steps he (Mayr) had to take to convince the German Geographical Society in Berlin that this book was a hoax and that the honors received by Detzner should be revoked.

Even better was the story about the local New Hampshire farmer who had trained wild and exceedingly shy beavers that were living on his property to come out of the water by throwing apples into the pond and calling: ‘Here, beaver, beaver, beaver’. He tossed the apples closer and closer to the shore, finally placed them on the ground until he could hand them to the beaver which was quite a feat. Mayr made arrangements to take the visiting ethologist Konrad Lorenz to see these beavers. The trip was successful, and while Lorenz was blissfully stroking the wild beavers sitting on the bank of the pond eating apples, Mayr asked the farmer why he called ‘Beaver, beaver, beaver’. The sensible New Hampshire farmer was surprised at what he considered to be a foolish question and replied: ‘What else should I call them?’

Toward the end of my graduate period in the spring of 1959, Mayr gave me a draft of his manuscript for the centennial celebration of the 1859 publication of Darwin's *On the Origin of Species* to be held later that year in Chicago, and asked me to look it over. I did so and saw him two days later, saying that he made four major points in the paper and enumerated them. He agreed that these were the points that he had advocated in his paper. My next comment was that he was wrong on each point. We argued for the rest of the afternoon, and he finally convinced me that one of his points was probably correct; Mayr's final paper was quite different from its original draft (Mayr 1959). Again, Mayr's reaction to my brash young comments showed that he was able to take criticism if well supported and that he was far more interested in what is correct than whether he or someone else reached the proper conclusion.

Once I had received my degree, Ernst Mayr asked me to call him Ernst as he felt that we were now colleagues and not teacher-student any longer. This was difficult for my wife Kitty and me, being properly raised, but Ernst insisted, and gradually it felt normal to do so.

Almost as soon as Ernst and his wife Gretel settled in their new home in Cambridge in September 1953, they started on their search for a weekend/summer home in the countryside and were quickly successful in finding an old farm on a dirt road in southern New Hampshire about one and a half hours' drive from Cambridge. Whenever possible, they spent weekends at 'The Farm' from mid-spring to the end of November and all summers, entertained friends and visitors, and made it available for research projects. Visits to The Farm were always informal with long nature walks guided by Ernst and pleasant meals in the kitchen where the food was cooked on a wood-burning stove, still being used to this day. My wife and I, and later our children, spent a number of happy visits to The Farm, the place on earth that Ernst and Gretel loved the most. One instance of these pleasant times comes to mind from the late 1950's when the Mayrs hosted a farewell party in late fall for one of the MCZ staff members. During the evening, my wife suggested a contest to see who could eat an apple suspended on a string without using their hands to hold the apple steady. Ernst joined in and was proud that he won. He was not troubled when someone pointed out that the person with the largest mouth had an advantage as this would allow most easily the critical first bite to be applied.

Early in 1979, I received a telephone call from Gretel Mayr asking if my wife and I would assist her and her daughters to have a surprise birthday party for Ernst. He had expressed the wish to have a party on this birthday. We did so and asked all of his former students and some of his closest friends to a party on 5 July 1979 at the Mayr Farm in New Hampshire. Surprise parties are difficult to do successfully and would be even harder in a small house sitting by itself in the middle of fields and woods. The planing was that a neighbour, a local forester, would take Ernst and me to inspect some of the trees in a section of their property well away from the house. While we were away, all of the guests arrived and their cars were hidden in the field so that they could not be seen from the road or the house. After we had completed the inspection, Ernst wanted to return to the forester's house by driving past his own home, a longer way, and I had to insist that this was not possible because we were already late and Sunday lunch was waiting. When Ernst and I finally returned to his house, all the guests were there and collected silently in the living room located on one side of the house. Ernst came in the front door, which was almost never used, and headed right for the kitchen, bypassing the door to the living room and calling for Gretel to tell her the results of the inspection. I was immediately behind him. When he got to the kitchen at the other end of the house and found no one, he turned to me, somewhat puzzled, and asked what was up. I answered innocently and said that they must be talking in the living room. When we returned there and opened the door, he was completely startled to see so many of his former students and friends – a complete surprise for him and successful planning for us. Ernst was as delighted as a young boy that so many people came to celebrate his birthday. Then everyone helped to place tables and chairs outside the house and get the food ready for serving the birthday meal. The food included a "four-legged" turkey that my wife, Kitty, constructed. Many pictures were taken and everyone had a most pleasant time. And little did Ernst realize that he had another quarter century before him. On 5 July 2004, he enjoyed his 100th birthday at the Farm with his extended family and a few students and friends.

After I completed my Ph.D., Ernst continued to mentor me with his support in obtaining a post-doctoral position in Frankfurt am Main, Germany, and subsequently my first position at the University of Illinois in Urbana-Champaign.

It is of special interest that he urged me strongly that one should always start with some positive comments when writing a book review, even if one believed that the publication was not very good overall. This was exactly the same advice that Ernst received from Professor Stresemann, his 'doctor-father', shortly after he started his position at the American Museum of Natural History in 1931. When I received an enquiry from the University of Illinois in early 1960, while I was still in my first year as a post-doctoral fellow in Germany, on whether I would be interested in a position there, my first reaction was to write to Ernst for his advice. He pointed out, quite correctly, that the University of Illinois would be an excellent starting position because I would have research support and reasonable teaching expectations so that I could continue my research as well as learning the tasks of teaching. I accepted the position when it was offered, and Ernst proved to be completely correct in his assessment of the university. And I am certain that he was a major influence in my being offered my current position at Columbia University in 1964. Ernst's quiet mentoring continued, both directly and

indirectly for many years in connection with my promotions at the university and in obtaining important new positions, such as my election to the International Ornithological Committee and its Permanent Executive Committee in 1974.

In late spring 1960, Ernst visited me in Germany on the last leg of his trip round the world during which he was able to visit several countries where he had never been before. This trip was part of a sabbatical leave just prior to his assuming the directorship of the Museum of Comparative Zoology at Harvard University. Just before coming to Germany, Ernst had been in India where he visited J B S Haldane. Haldane took Ernst to a large market where one of the things that impressed Ernst greatly was a potter making clay cups on his turning wheel. These cups had to be quite accurate because they were to be used to measure food stuffs for sale. What impressed Ernst most was the speed with which each cup was produced, which was much less than one minute (as I recall after four decades).

Most importantly, our friendship deepened as the years went by – certainly on my part and, I believe, on Ernst's, too. This friendship started soon after Ernst had decided to accept me as a Ph.D. student in 1954, continued during my years at Harvard, and increased steadily in the following years. We maintained an extensive correspondence, at least 1,500 letters (over 800 since I started to use a computer and was able to number my letters as I archived them electronically). He expressed delight in my various discoveries, read my manuscripts carefully, and provided advice and criticism on them throughout my career. Most importantly for me was that he also considered my assistance important and, for example, asked me to read the entire manuscripts of his several last books. With Ernst, respect was always a two way street.

Interestingly, and in spite of our close connections and similar interests, we co-authored only two papers, of which the last one (Mayr and Bock 2002), which deals with the general question of ordering systems in biology, was the most interesting by far. We interacted closely in writing this paper, with each of us extensively editing and rewriting what the other just wrote. This process could have gone on for years, but we decided that a halt had to be called and the manuscript sent to the editor; otherwise this project would have turned into a book. Unfortunately, Ernst was disappointed with what he perceived to be a lack of interest by biologists and philosophers in this paper. He never learned the general impact of this paper because it was only after his death when the editor-in-chief of the journal informed me that our paper had received the greatest number of 'hits', over 1,500, in the electronic version of the journal.

A high point in our relationship came in early December of 1994, when I was invited by the Japan Society for the Promotion of Science to accompany Ernst to Tokyo when he was awarded the International Prize for Biology in honor of the Emperor. In spite of my assurances that he was in excellent health, the Japanese organizers were concerned about Ernst's advanced age of 90 years, and they felt that I could serve as his 'major-domo'. This relationship was observed with great amusement by Ernst who commented to me that when the Japanese organizers wanted to pass some information to him, they would talk to me and expect me to tell him even when he was standing right next to me and could hear every word. The apex of this trip for me was when I was invited with Ernst and his daughter, Christa, to dinner with the Emperor and Empress of Japan in the royal palace.

Because Ernst's scientific career started in 1925 and because he had the opportunity to meet a number of biologists whose careers spanned the period from the 19th to the 20th century, he was a rich source of information about scientists we know only as distant figures mentioned in textbooks and histories of the early years of modern biology. He enjoyed talking about the work and personalities of these earlier scientists and answered what seemed to be an endless series of questions from me about early ornithologists, evolutionists and other biologists – tidbits of information that are not found in more formal articles and books on the history of biology, which are most useful in understanding the work and ideas of these earlier scientists. Although his work was mostly on the history and philosophy of biology during the last two decades of his life, he retained a great interest in ornithology and enjoyed most of all to talk about old and new problems in avian biology. He was fascinated by my reports to him about the breeding of wild turkeys (*Meleagris gallopavo*) and common ravens (*Corvus corax*) in Tenafly, New Jersey, where he had lived from 1937 until 1953; he never expected that these species would re-invade and breed in this town that is located on the other side of the Hudson river from New York City.

Ernst was most generous in many ways. He donated most of the prize money he received from the Balzan Prize (Switzerland), the International Prize for Biology (Japan), and the Crafoord Prize (Sweden) to a fund supporting visiting young biologists working at the Museum of Comparative Zoology and other worthwhile causes. He presented his library to institutes and persons he felt would be able to make use of these books. Several years ago, he gave me his copy of Stresemann's seminal 1927–34 work on *Aves* which was of special significance to me because Professor E Stresemann was Ernst's 'doctor-father' in Berlin. In 2003, when he was moving to a smaller office in the museum, he allowed me to pick out a large number of ornithological books, many of which would have been impossible to obtain. And in June 2005, when I visited Ernst's daughter, Susie, she handed me a small box, telling me that her father wanted me to have the object in it, which was the ring that Ernst had received in 1957 when he was awarded his first honorary Ph.D. from the University of Uppsala (Sweden), and which he wore ever since, as will I in his memory.

On 3 July 2005, a pleasant sunny summer day with birds singing and a woodpecker drumming in the background, I joined Ernst's two daughters and their spouses, his five grandchildren and their spouses, and his ten great-grandchildren to scatter his ashes along a path overlooking the lake at The Farm. The ashes of his wife Gretel had been scattered there in 1990. This is the place that Ernst and Gretel loved the best in their beloved Farm, which they acquired in 1954. Thus, I could say good-bye to the most important person in my scientific career and a real friend.

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WALTER J BOCK  
*Department of Biological Sciences,  
Columbia University,  
1212 Amsterdam Avenue,  
Mail Box 2341,  
New York, NY 10027, USA  
(Email, wb4@columbia.edu)*

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