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## **IN MEMORIAM: PAUL SLUD, 1919-2006**

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## In Memoriam

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### IN MEMORIAM: FRANCISCO BERNIS, 1916–2003

EDUARDO DE JUANA AND JOSÉ LUIS TELLERÍA

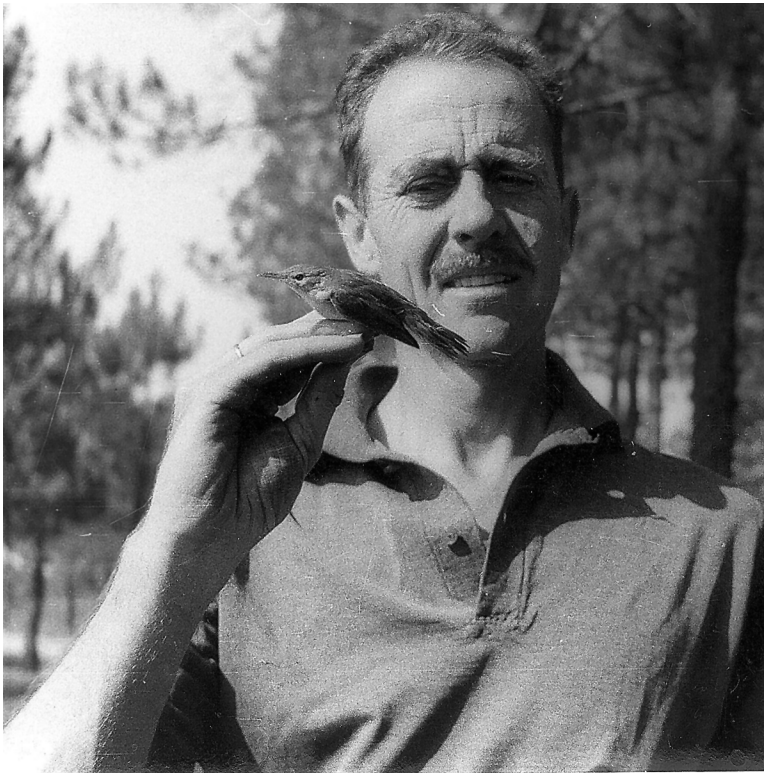
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Francisco Bernis Madrazo, the father of modern ornithology in Spain, was born in Salamanca on 16 August 1916 and died in Madrid on 10 November 2003. He published his first avifaunistic accounts as a 17-year-old. His studies of birds and natural history were dramatically interrupted by the Spanish Civil War (1936–1939), but were eventually completed in 1941. His doctoral work in botany was completed in 1950, and his review of the genus *Armeria* (Plumbaginaceae) was published between 1953 and 1956. With very few exceptions, previous knowledge of the birds of Spain within the country was the result of sporadic visits by foreign ornithologists. Bernis realized that only a major effort would improve the situation, and he devoted the rest of his life to achieving it.

In 1954, along with a small group of like-minded enthusiasts, he founded the Spanish Ornithological Society (now SEO/BirdLife). SEO publishes the journal *Ardeola*. In the first issue, Bernis published "Prontuario de la avifauna española," a checklist of the birds of Spain (1954). The SEO established a library, began a banding program, and initiated winter waterfowl counts, a nest record scheme, and national censuses of some species and, from the early 1970s, ornithological atlas and raptor migration counts. For 20 years, Bernis served as SEO's Secretary General and Editor of *Ardeola*, devoting huge amounts of personal time and effort to make up for a chronic lack of funds and paid staff. In 1956, he was appointed Professor of Vertebrate Zoology at Madrid University (Universidad Complutense), where he undertook a notable career in research and conservation.

Bernis's *Migración en Aves, Tratado Teórico y Práctico* (1966), was a modern and authoritative synthesis of avian migration. In *Aves Migradoras Ibericas* (1966–1971) and *Migración de las Aves en el Estrecho de Gibraltar, vol. 1: Planeadoras* (1980), he documented migration in Spain and provided accurate data on the raptors and storks that crossed from western Europe to Africa. He also published on the distribution and ecology of Iberian birds, and his *Información Española sobre Anátidas y Fochas* (1964) gave the first account of important sites for waterfowl. His "An ecological view of the Spanish avifauna, with reference to the nordic and alpine birds," read at the eleventh International Ornithological Congress held in Basel in 1954, sparked the interests of many young Spanish workers who entered ornithology.

Bernis was a pioneer conservationist. In the decades between the 1940s and the 1970s, Spain underwent huge social and economic changes. Major conservation problems included the reclamation of wetlands and the persecution of birds of prey. Bernis effectively persuaded the organizations in charge of game and forest management to adopt policies similar to those in more advanced countries. For example, in 1956, on behalf of the SEO, he prepared a full proposal for a list of protected bird species. He had prepared, in 1953, a detailed memorandum sent to General Franco on the need to conserve the Coto Doñana. In 1972, he was an official Spanish delegate at the Ramsar Conference on the conservation of wetlands and waterfowl. Francisco Bernis was directly involved in the establishment of the national sections of the International Council for Bird Preservation (now BirdLife International) and the World Wildlife Fund. But



FRANCISCO BERNIS, 1916–2003  
(In Cantalejo, Spain, 1963. Photograph by Juan Antonio González Morales.)

his major contribution was through the pages of *Ardeola*, which were used to disseminate ideas and information on conservation. Not surprisingly, most of the many environmentalist groups founded in Spain during the 1970s and 1980s were initiated by young SEO members.

During his career at Madrid University, until he became Emeritus in 1985, he directed 23 Ph.D. students, most of them in ornithology, many of whom are now engaged in teaching and research in Spain. Meanwhile, SEO/BirdLife has grown into an influential organization with more than 9,000 members and 50 full-time staff. Equally important is that our knowledge of birds in Spain and prospects for conservation have improved greatly. Bernis's dreams have, in large measure, been fulfilled.

Bernis was an austere, hardworking man. He enjoyed birds, dogs, and field walks. He cared for a small orchard collection in his chalet at La Granja, in the Guadarrama Mountains. He married Cristina Carro in 1945; she died on 26 June 2002. They raised three children. To the young people whose fortune it was to work at his side, he always promptly gave help and advice.

Bernis was made an Honorary Fellow of the AOU in 1982. He was also a Corresponding or Honorary member of the British Ornithologists' Union, the Deutsche Ornithologische Gesellschaft, and The French Society for Ornithology. He became Honorary President of SEO/BirdLife. His truly exemplary work will have an everlasting influence in Spanish ornithology and conservation.

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## IN MEMORIAM: JOACHIM STEINBACHER, 1911–2005

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Joachim Steinbacher, Curator Emeritus of Ornithology at the Senckenberg-Museum in Frankfurt am Main, Germany, was born on 18 November 1911 in Hoexter on the River Weser. He died in Bad Homburg vor der Höhe on 31 July 2005.

Steinbacher spent his childhood mainly in Goslar in the Harz Mountains. His passion for birds started in his early school days. His enthusiasm was encouraged by his uncle, Friedrich Steinbacher, himself a renowned ornithologist. Joachim Steinbacher frequently went to Berlin, where his uncle and his cousin Georg lived. Together they undertook long trips in the local region. This was good training, and Steinbacher soon became an experienced bird watcher, publishing short articles on the birds of Germany.

After Gymnasium, Steinbacher worked at the Vogelwarte Helgoland and took part in a project on bird migration that covered most of the North Sea. In 1931, he started at the University in Goettingen and soon afterward transferred to Berlin. Between terms, Steinbacher worked at the bird-banding center of Rossitten, mainly in studies on the Black-headed Gull and the White Stork. In 1936, under the supervision of Oskar Heinroth, Steinbacher, along with Helmut Sick, produced the first vinyl recordings of bird songs, with a second edition in 1937. He finished his doctoral dissertation in 1937 under Erwin Stresemann. The work dealt with the anatomy and systematics of the Galbulidae and Bucconidae.

After university, he spent several months as an unpaid trainee at the Berlin Zoo. This experience strengthened his interest in the methods of keeping and breeding birds in captivity. In 1938, he became Editor of *Gefiederte Welt*, a position he held until his death, 67 years later. *Gefiederte Welt* deals mainly with birds in captivity; it reached volume 130 in 2006.

In 1940, when G. Niethammer moved to Vienna, Steinbacher became head of the

ornithological department at the Alexander-Koenig-Museum in Bonn. After World War II, Niethammer returned to Bonn and Steinbacher went to the Senckenberg-Museum. There, he finished a popular book on bird migration that was published in the series of Senckenberg Books in 1951. Subsequently, Russian and Chinese editions appeared without permission.

In 1954, Steinbacher became Curator of Ornithology at the Senckenberg-Museum. His broad ornithological knowledge enabled him to do research in anatomy, teratology, ecology, biogeography, migration, taxonomy, and conservation. For several years, he focused on the birds of South America, especially Paraguay. Steinbacher was a gifted popular writer, and served as coeditor of three volumes on birds in Grzimek's Tierleben. He contributed numerous articles to *Gefiederte Welt* and *Natur und Museum*. He established a foundation that provided travel grants for students and personally traveled worldwide in support of ornithological studies and conservation of nature.

Steinbacher's achievements were recognized in many ways. In 1971, he was elected Corresponding Fellow of the AOU. In 1992, he received both the Order of Merit of the Federal Republic of Germany and the silver Senckenberg-Medal. In 1965, Romania appointed him Honorary Inspector for the Conservation of Nature.

Steinbacher married Elfriede Hecke in 1940. A charming and affectionate person, she fully supported his many activities, especially the editing of *Gefiederte Welt*. Elfriede Steinbacher died in 1990, after 50 years of married life. They had no children.

After retirement in 1976, Steinbacher continued to work and travel, slowing down only in the beginning of his 10th decade. He will be missed as an extremely amiable, patient, and helpful colleague, and as a good friend.

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## IN MEMORIAM: RAYMOND JOSEPH O'CONNOR, 1944–2005

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Transatlantic ornithology lost a unique practitioner with the death of Raymond Joseph O'Connor on 29 September 2005, from cancer. In his native British Isles and adopted North America, Raymond made original contributions that have helped shape modern ornithology on three continents. He joined the AOU in 1975 and became an Elective Member in 1988 and a Fellow in 2005.

Born on 20 January 1944, in Dublin, Republic of Ireland, Raymond was educated at church schools in Ireland and remained a devout Catholic throughout his life; his religion gave him strength and comfort through his terminal illness. He first became interested in birds at the age of 12, when, as he watched a small bird methodically weaving fibers into a nest, he and the bird made eye contact, a connection he had never experienced before. Birding remained a hobby while he completed a B.Sc. in Physics and Mathematics at University College in Dublin in 1965. After working for three years on a Ph.D. in Physics at Birkbeck College in London, a program to allow physical and biological scientists to interchange careers facilitated his transformation into an ornithologist; he moved to the Edward Grey Institute of Field Ornithology at Oxford as a Nuffield Foundation Biological Scholar. He studied growth and development of birds for his D.Phil. in Zoology (1971) under Christopher Perrins. His unusual combination of laboratory and field experiments led to the landmark *Growth and Development of Birds* (1984), which remained the key reference on the topic until quite recently. Oxford contemporaries recall his somewhat intimidating intelligence, exemplified during coffee breaks when he would absentmindedly solve a Rubik's cube while carrying on a conversation to which he appeared to be paying his complete attention. He worked long hours, built necessary equipment himself, and always retained a clear vision of where the work was taking him. Though

clearly brilliant, he was approachable and a great conversationalist. He was a mentor to students and colleagues, always willing to advise and critique with kindly precision—a facility he retained throughout his career.

He held a lectureship in Animal Ecology and Behaviour at Queen's University, Belfast, Northern Ireland, from 1972 to 1975. His departure for a similar position at University College Bangor, North Wales (1975–1978), was precipitated by the escalation of violence in Northern Ireland; in particular, the shooting of a colleague coming out of church “just because of his religious persuasion” made a deep impression. In both positions, Raymond continued his research on avian growth and development but also moved, in collaboration with colleagues, into new areas—including, for example, community structure in intertidal systems.

In 1987, Raymond became Director of the British Trust for Ornithology (BTO) and brought his unique combination of quantitative, biological, and personal skills to reshape it into the world-leading organization it is today. He oversaw the computerization of clerical records of populations, nest records, and banding, all data gathered by amateurs and organized by professionals. His recognition that all aspects of the BTO's data collection could be integrated to answer critical population questions, and his powerful advocacy of the BTO's need for the requisite computer power, set the stage for national-scale analyses of bird population dynamics not previously possible and rarely contemplated. The seminal paper in *Ardea* (“Pattern and process in Great Tit populations in Britain,” 1980) showed how information gathered by volunteers for BTO programs could be corroborated by, and in some cases extend, the understanding from numerous intensive professional studies on the species. It also showed how the value of the data in each separate program is greatly improved by comparison with





RAYMOND JOSEPH O'CONNOR, 1944–2005  
(Photograph by Jonathan Rubin.)

data in the others, so that the value of the whole exceeded the sum of the parts. This paper, those on other species, and Raymond's participation in the 1983 "Birds and Man" Symposium in Johannesburg, were influential in establishing the national Bird Populations Data Bank and Avian Demography Unit as a South African version of the BTO.

While at the BTO, Raymond applied the Trust's emerging capacity for integrated population analysis to agricultural birds, leading to his 1986 book *Farming and Birds*, written with Michael Shrubbs. This work demonstrated the previously unrecognized deleterious effects of modern intensive farming practices on a wide variety of birds.

In 1987, as his BTO role moved further away from research and into administration, Raymond accepted a faculty position in the Department of Wildlife Ecology at the University of Maine in Orono, where, among many other projects, he strove to apply the BTO approach to U.S. data. Volunteer bird programs in North America

evolved differently, in a heterogeneous combination of nongovernmental and government agencies, with the unfortunate result that North America still lags behind the United Kingdom and South Africa in bringing together all these diverse data sets to achieve continental-scale understanding of bird population dynamics. Raymond chose the best-organized bird population data available at the continental scale, the Breeding Bird Survey (BBS), and collaborated with colleagues in a broad range of other disciplines to apply BBS data to geographically and temporally large questions of interactions between biodiversity, the physical environment, and human activities. His last book (*Atlas of Climate Change Effects on Common Birds in 150 Bird Species of the Eastern United States*, with S. N. Matthews, L. R. Iverson, and A. M. Prasad, 2004) provides insight into the power of this approach to answer some of the questions now faced by contemporary ornithology and society. Much of his groundbreaking work was published in reports and in non-ornithological

journals. (Apart from reviews, only three of his publications since coming to the United States were in bird journals.) This approach raised the credibility of ornithological data among practitioners of other fields but has not had the reciprocal effect of broadening the outlook of most ornithologists or increasing their appreciation of their discipline's value to society in general.

Raymond was not only an original and accomplished researcher, but a popular and effective teacher. Through his university teaching career, he taught at least 17 different undergraduate and graduate courses, covering animal behavior, evolutionary genetics, landscape ecology, population dynamics, conservation biology, endangered species recovery plans, and various quantitative topics, including modeling, microcomputers, and complex multivariate statistics. His interest in university-level teaching led to publications in such journals as *The Scientist* ("Why ecology lags biology"), *The Teaching Professor* ("Using oral examinations in a statistics class"), and *The Chronicle of Higher Education* ("Rethinking the role of peer reviews"). His students remarked particularly on his unique ability to make wildlife-biology undergraduates like statistics. His kindness, patience, and dedication to teaching, and his respect and consideration for students, were legendary.

Raymond's breadth of interest and expertise is reflected in the many committees and working groups to which he contributed, including (among many others) the Food Quality Protection Act Science Advisory Board of the Environmental Protection Agency (EPA), the American Institute of Biological Sciences

Working Group on Infrastructure for Biology, the U.S. Geological Survey Peer Review Team for the Breeding Bird Survey, the National Science Foundation's working group on Biodiversity Observatory Networks, and the EPA's Endocrine Disruptor grant review panel. Some of the honors Raymond earned were membership in the International Ornithological Council (1980–1984), National Research Council Senior Research Fellow (1993–1994), and Guggenheim Memorial Foundation Fellow (2001).

Raymond's strong interest in biology as a science and his physics background led him constantly to challenge ornithologists and ecologists to aspire to the strict standards of biology, and biologists to emulate the standards of physics; he often found us wanting, and told us so with clarity and passion. Throughout his career, Raymond held ornithology's feet to the fire of physics, and the profession is better for it.

In 2005, Raymond, his wife Deirdre Mageean, and their son Eoin moved to Greenville, North Carolina, where Dr. Mageean had been appointed vice chancellor for research and graduate studies at East Carolina University, and Raymond took a position in the Department of Biology. His return to Ireland for burial reflects his family's deep love for his native land. Their loss is shared by many friends and colleagues throughout the world who mourn the premature end to the unique and inspiring career of one who was universally admired and respected.

For help in compiling this memorial, I thank P. G. H. Evans, F. B. Gill, D. Harrison, M. Hunter, D. Mageean, C. M. Perrins, R. Prÿs-Jones, J. Rhymer, and R. E. Ricklefs.

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## IN MEMORIAM: PAUL SLUD, 1919–2006

RICHARD L. ZUSI

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Paul Slud, Associate Curator of Birds at the National Museum of Natural History (Smithsonian Institution) from 1964 to 1983 and Elective Member of the AOU, died on 20 February 2006 at age 87. Paul's work concerned the distribution and general ecology of birds of Costa Rica, the relations of faunal components to climate and vegetation, and methods for broad faunal comparisons. As a small boy in New York City, his life-long interest in nature was fostered by trips to the Bronx Zoo and by reading stories about exotic "jungles." After taking an eclectic mix of courses at City College of New York, he received a degree in geography, and in 1948 he took Arthur Allen's ornithology course at Cornell University. He chose to study a vertebrate group exhibiting song and bright plumage rather than something one would find "under a rock." Most of his first three years as a graduate student at the University of Michigan were spent in Costa Rica, where he collected specimens for the Museum of Zoology. He also worked briefly for the Museo Nacional de Costa Rica. In the field, he was a skilled observer and an expert in identification of bird vocalizations. During his field and museum work, Paul began an extended correspondence with Alexander Wetmore, whose expertise in species-level taxonomy of Panamanian birds helped Paul formalize his own observations on subspecific variation in Costa Rican birds. In turn, he answered Wetmore's questions about details of distribution of Panamanian species in adjacent Costa Rica. Paul's Ph.D. thesis work at Finca "La Selva" was a practical application of his conviction that a series of well-chosen site studies was the best basis for faunal comparisons. In that work, he took Ernst Mayr to task for his ideas about a northern origin of the Neotropical avifauna and the competitive superiority of oscine passerine birds over the suboscines in the New World.

Paul managed to live on grants while completing his book on Costa Rican birds. In the

early 1960s, he held a one-year appointment at the University of Florida, a salaried Research Fellowship at AMNH, and an NSF grant for further field work. In addition, a Guggenheim Fellowship supported his study on birds of Cocos Island, Costa Rica. In total, he spent more than eight years of field study in Costa Rica, often living under primitive conditions. He lamented that field stations were "usually in the wrong place."

Paul had a knack for conveying the essence of his field experiences as well as facts and hypotheses. A good example is a paper published in *The Condor* in 1958, in which he explored the taxonomic implications of his discovery of two geographically distinct songs in the Nightingale Wren that did not conform to the limits of known subspecies. The description of his field work that led to this epiphany is a classic. It also illustrates his dedication to ecology rather than traditional museum studies, in that he left it to others to discover the morphological differentiation associated with the song types and to recommend the recognition of two species.

One of Paul's early discoveries in comparative faunistics was a remarkable correspondence between the ratio of suboscine to oscine birds at different Neotropical sites, and their relation to his detailed descriptions of habitats at each site and to the Holdridge maps of World Plant Formations. For example, higher ratios predicted wetter and more complex forest. In an attempt to test this idea worldwide and to evaluate other kinds of ratios used by others for faunal comparisons, he embarked on a quest for meaning in ever more complex ratios that culminated in his "Geographic and Climatic Relationships of Avifaunas with Special Reference to Comparative Distribution in the Neotropics" in 1980. Unfortunately, the emphasis on ratios often overshadowed his insightful discussions of faunal comparisons,



faunal origins and evolution, island biogeography, source pools, ecological competition, the importance of migrants, and other topics.

Although Paul made little use of the collections at NMNH for systematic studies, he was a stickler for the details of curatorial practice to an extent that drove the technical staff to distraction. However, among other improvements, he initiated expansion of the collections to a third tier of cases to alleviate overcrowding of

specimens and gave each case a unique designation such that new cases could be added without changing existing designations. He then had a booklet prepared that gave the case location for each avian genus, alphabetically listed.

Paul knew the Mozart operas by heart, read extensively, and enjoyed local bird watching and stamp collecting among other interests. He is survived by his wife, Barbara, two children, Michael and Martha, and four grandchildren.

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