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MUSEUM OF COMPARATIVE ZOOLOGY

Stephen Jay Gould Meets Pope John Paul II



Stephen Jay Gould and Pope John Paul II at the Vatican, January, 1984.

Twenty scientists from eight nations traveled to Rome in January to provide Pope John Paul II and the Pontifical Academy of Science with data on "nuclear winter" for his statements against nuclear war. Professor Stephen Jay Gould, Curator of Invertebrate Paleontology at the MCZ, was the only biologist in the group. Other Americans included Vickie Weisskopf, Carl Sagan, Gene Shoemaker, and Charles Tournes. The nuclear winter scenario proposes that the dust and soot remaining in the atmosphere from even a limited nuclear engagement would leave the earth dark and cold, severely affecting post-war agriculture.

The "nuclear winter" argument can bring genuine hope in the struggle to avert a holocaust for at least three reasons, according to Gould: 1) it is a really new, unexpected consequence of nuclear detonation which challenges even the most apathetic; 2) it destroys the illusion held by much of the world's population that those not near the primary nuclear target site could survive and lead a relatively normal post-war life; 3) as a result of its global implications, Southern Hemisphere and Third World countries are encouraged to join the anti-nuclear cause.

Gould reports that Pope John Paul II warmly shook hands and

greeted the visitors in their own languages. Although he had expected to speak in French, the Pope switched to English at the last minute to deliver his remarks. He emphasized the importance of combining factual information with moral issues. "It was such a pleasure to see a world leader with such obvious intelligence."

Gould's specific contribution to the group's nuclear winter projections was his paleontological perspective on continuity and extinction. Readers are referred to the April, 1984 issue of *Natural History* for his column entitled "Continuity" where he ponders the potential irony of the human race extinguishing itself in a way not dissimilar from a current theory which explains how the human race evolved the intelligence to reach this globally suicidal stage. This theory postulates that a giant asteroid struck the earth at the end of the Cretaceous and filled the atmosphere with sufficient debris to eliminate the giant reptiles who had ruled the earth for the previous 100 million years. The way was cleared for mammals, then small creatures of rat-like proportions, to inherit sovereignty of the earth. While it is interesting to speculate on the identity of the next rulers after "nuclear winter", Gould dismisses the Chain of Being theory which assumes that intelligence, and everything else that makes up God's world, will always be replenished. On the contrary, intelligence could well be a glorious accident of evolution never to be repeated. If the cockroaches take over, theirs will not necessarily be a world graced by intellect.

Hibernation Studies Update



Charles P. Lyman visits some animals which hibernate in the MCZ's exhibit area

Charles P. Lyman, Professor of Biology *emeritus*, is not letting retirement interfere with his life-

long research into the mysteries of hibernation.

One aspect of his current work at the Concord Field Station came about by accident. In 1967, he tried to get some additional Syrian hamsters from an Israeli university but politics intervened. He had to settle for some Turkish hamsters acquired through an Ankara contact of Miss Barbara Lawrence, then Curator of Mammals at the MCZ. Lyman thought these hamsters were almost identical to the Syrian variety since they were almost indistinguishable in appearance. However, they would not interbreed and differed in a remarkable way. "The Syrian hamsters were bad hibernators, waking up very easily, while the Turkish ones were fabulous hibernators with a very long arousal sequence when poked or pinched," recalls Lyman. "In the early stages of hibernation, it proved impossible to wake up the Turkish hamsters at all."

In order to find out why, Lyman is attempting to isolate the wake-

up substance that the Turkish variety may be missing by infusing various adrenalin-like substances, through a catheter, into the hibernating hamster. Lyman hypothesizes that it also could be an exaggeration of the normal pattern, that an evolutionary extreme has been reached in this variety.

As with many other aspects of hibernation, the survival value of the ability to wake up has not been ascertained. It is difficult to quantify how often a ground squirrel wakes up before being dug up and eaten by a grizzly or black bear in Alaska.

Lyman's life-long work on hibernation culminated in the publication of his book, in collaboration with John S. Willis, Andre Malan, and Lawrence C. H. Wang, entitled *Hibernation and Torpor in Mammals and Birds* (Academic Press, 1982). It has received highly complimentary reviews in many publications including *Science* and *American Scientist*.

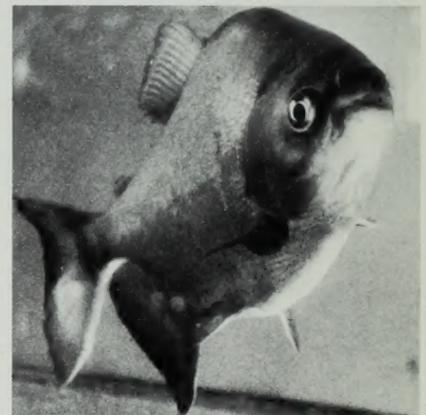
Frances J. Irish Wins Best Paper Award



For the second consecutive year, an MCZ student was honored by the American Society of Zoologists. Last year, Mark Patterson (see *MCZ Newsletter*, Vol. 12, No. 2, Spring, 1983) was recognized and this year, Frances J. Irish received the D. Dwight Davis Award for the best student paper in Vertebrate Morphology for her project on the biomechanics of seed-eating in the pacu, a large Neotropical fish related to the piranhas. According to Irish:

"Simultaneous high-speed cinematography and monitoring of muscle activity suggest that pacu are able to crack open extremely hard seeds (on the order of Brazil nuts) by using a muscle firing pattern which exploits the mechanical properties of the seeds themselves . . . This is important ecologically, since it allows them to be major predators on the seeds of Neotropical trees; it is important evolutionarily, since observations in the current literature suggest that a number of other animals may utilize a similar mechanism for dealing with hard prey (e.g., crabs and turtles feeding on clams.)"

A third-year graduate student working with Karel F. Liem, Bigelow Professor of Ichthyology, Irish worked for six years in the Division of Reptiles and Amphibians of the Museum of Natural History in Washington. Her recent interests have expanded from reptiles to fish "because there are so many of them, and they are so extraordinarily diverse in form and habit." But



Almond-eating pacu from Brazil

her original interest in snakes has continued, particularly in comparing their jaw mechanics and tooth form to those of fishes.

Irish teaches in the Gross Anatomy course at Harvard Medical School. She hopes to use the methods and insights gained from study of the human musculoskeletal system to further illuminate the evolution of feeding mechanisms in vertebrates in general.

Ernst Mayr Awarded the Balzan Prize



Photo by John L. Nevins

Thomas D. Cabot, long-term friend and former member of the MCZ's governing board, Director James J. McCarthy, and Ernst Mayr (l. to r.) at the Balzan Prize celebration on May 1, MCZ Romer Hall of Vertebrate Paleontology.

Ernst Mayr, Alexander Agassiz Professor of Zoology *emeritus* and former MCZ Director, was recognized for his preeminent role in the shaping of modern evolutionary theory by the Balzan Foundation this year.

The Balzan prize is to the natural sciences what the Nobel prize is to the physical sciences. Indeed, one

of the stated objectives of the prize is to honor fields of scholarship not eligible under the restrictive conditions of the Nobel Prize. First awarded in 1961, it was discontinued for 14 years and reinstated in 1978. As Stephen Jay Gould put it in his article "Balzan Prize to Ernst Mayr" (*Science*, January 20, 1984): "This year, and for the first prize

designated in zoology, the Balzan Foundation has rightly selected our greatest living evolutionary biologist, Ernst Mayr."

Gould says of Mayr:

He stands firmly among the handful of great biologists who, from the mid-1930's until the Darwinian centennial celebrations of 1959, established from preceding chaos a paradigm of evolutionary thought known as the "modern synthetic" theory . . . Mayr's distinctive intellectual contribution to the synthesis lies squarely with his work on theories of speciation—the production of diversity.

Champagne flowed at the reception to mark the occasion on March 1 in the MCZ's newly-opened Romer Hall of Vertebrate Paleontology. Director James J. McCarthy thanked Mayr for his generosity in contributing the prize money to provide stipends for visiting scholars of systematics to pursue their research with museum specimens, Gould eloquently celebrated Mayr's remarkable career—which seems to have accelerated since his retirement in 1975, and nearly a hundred friends and colleagues joined in the toast of congratulations.

Joins Public Programs Staff



The new Assistant Director of Public Programs, Cherrie A. Corey, came to the MCZ in December with a profusion of qualifications and experience in the many areas that comprise a museum's public activities.

Her responsibilities include a concerted public relations effort to increase the MCZ's visibility—the recent wave of articles about the new Romer Hall of Vertebrate

Paleontology was the result of her first major publicity campaign for the MCZ. She was also responsible for compiling the April MCZ supplement to the *Harvard Gazette*, increased programming for local audiences, and new membership and program publications.

Together with shop manager Chantal Kammrath, Corey is also undertaking an evaluation of the Agassiz Museum Shop's potential and formulating a long-time plan for the shop. In addition, she supervises the admissions desk operation, a challenging task during the current renovation.

Corey was Program Director at the New England Wildflower Society's Garden-in-the-Woods for five years prior to coming to the MCZ. She has also worked as exhibits planner at the Museum of Science and recently completed three years of service on the Board of the Massachusetts Environmental Education Society.

Funding for this position is made possible by a grant from the Institute of Museum Services.

Friends Trips for 1985

At their meeting to plan the 1985 travel program in April, the Friends of the MCZ Trip Committee decided to offer nature tours to Morocco/Spain (March), Borneo/Sulawesi (August), and Southern Africa, including Zambia, Zimbabwe, and Botswana (date to be decided following scouting tour). Detailed information about all these trips will be mailed to Friends during the summer.

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Editor: Gabrielle Dundon
Photographer: A. H. Coleman

Alfred S. Romer Hall of Vertebrate Paleontology Opens



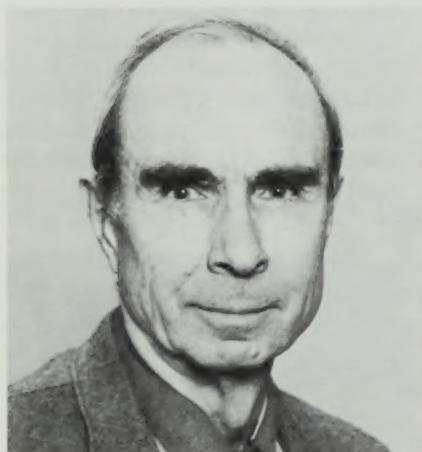
Ruth and Alfred Romer uncovering *Dimetrodon*, one of their best finds, Briar Creek, Texas, April 1956. Ruth Romer captivated guests with personal reminiscences of her late husband's career at the opening of the Romer Hall on February 28.



Farish A. Jenkins, Jr., Professor of Biology and Curator of Vertebrate Paleontology, (r.) explains the significance of the new hall to Director James J. McCarthy and 150 assembled well-wishers.

Photo by John L. Nevins

Philip J. Darlington, Jr. 1904–1983



Philip J. Darlington, Jr., 1971

Philip J. Darlington, Jr., Alexander Agassiz Professor of Zoology *emeritus* and noted authority on insects and their distribution, died on December 16, 1983.

He first came to Harvard as an undergraduate, earning his bachelor's degree in 1926, master's in 1927, and doctorate in 1931. He joined the MCZ staff in 1932, was appointed Fall Curator of Coleoptera (beetles) from 1940 to 1962, and Head Curator of Insects from 1952 to 1962. He retired in 1971.

Darlington's long career included many major contributions to science, including several new

species which were named after him: the lizards *Lygosoma darlingtoni* and *Amphibolurus darlingtoni*, a frog *Eleutherodactylus darlingtoni*, and a bat, *Eptesicus darlingtoni*.

His far-ranging field work included several dramatic moments. His ascent in the 1930's of Mount La Hotte, reputed to be the least known and most hazardous mountain peak in Haiti, and his encounter with a crocodile in New Guinea which left his right arm in a cast for several months, enabling him to develop his left-handed field collecting technique, are rich chapters in the field lore of entomology.

At "A Service of Thanksgiving for the Life of Philip J. Darlington, Jr." on February 10, his friend and colleague of 60 years, Frank M. Carpenter, Fisher Professor of Natural History *emeritus*, answered the question he posed, "Why was it so much fun to be with Philip?" by remembering his "direct and straight approach to any situation or question." To illustrate, he recalled Darlington's resolution to a continuing debate, carried out on the back steps of the MCZ, on the geographical distribution of animals between himself and then-

MCZ Director Thomas Barbour in the late 1930's.

Barbour was an advocate of land-bridges while Darlington thought that insects and other terrestrial invertebrates might have been transported by winds for considerable distances before being dropped to the ground. To demonstrate his theory to the doubting Barbour, Darlington dropped several frogs from the fifth floor of the MCZ to the grass below, where Barbour and a crowd of spectators were assembled. According to Carpenter:

"as each frog landed . . . , Dr. Barbour shouted to Philip, 'That one's dead!' When they had all been dropped Philip called down to Dr. Barbour asking how they were, to which he replied, 'They're all dead.' But almost immediately the stunned frogs began to recover and in a few minutes they began to hop about in all directions. I don't think that Dr. Barbour was convinced, but the discussions on the rear steps were on other subjects after that."

Elizabeth Darlington, his wife and constant field companion, recalled how their joint collecting career began with their honeymoon and continued throughout their life together. In recent years they concentrated on local exploring which has "led us to a fine local blueberry bog and local wild cranberries. Don't ask where!"

