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MCZ newsletter

MUSEUM OF COMPARATIVE ZOOLOGY

Dr. Phillip Darlington

PROFESSOR ALFRED S. ROMER, 1894-1973

Professor Alfred S. Romer's death on November 5, 1973 left the MCZ sad and quiet; it will never be quite the same again.

Harvard's Memorial Church was packed with as many of Dr. Romer's friends who could manage to be there on November 19 for an eloquent and moving memorial service. The speakers were Director A. W. Crompton, who talked principally about Dr. Romer's scientific work, Professor Paul H. Buck (Provost of the University 1945-1953) with whom Dr. Romer worked closely on critical problems facing the museum during his early years as Director of the MCZ, and Professor Kenneth V. Thimann, a long-time colleague in the Department of Biology and a close friend. A personal remembrance by one of his former students, Professor Keith S. Thomson, now at Yale, reflected not only the high esteem but also the warm affection he inspired in his many students. Mrs. Romer and other members of the family met friends after the service in the Agassiz Room.

Professor Romer bequeathed to the MCZ his magnificent personal library of scientific books and reprints covering the fields of vertebrate anatomy, embryology, and paleontology. A Memorial Fund has been established to transform his office into a comfortable, attractive reading room for faculty, students, and visitors. Mrs. Romer will officially open the Alfred Sherwood Romer Library, hopefully before Commencement.

The fauna of the Texas Permian, which includes the large sail-backed reptile with which his name will always be linked, was Professor Romer's major research interest, and it is fitting that the last manuscript which he completed was a detailed stratigraphy of the Wichita Beds of the Texas Permian. This put the finishing touches on, to quote Dr. Romer, "an area of research which has occupied a central place in my interest for more than half a century".

This is not the place for an extensive obituary; Professor Romer's fundamental contributions to scholarship in paleontology and anatomy and his accomplishments as Director of the MCZ (1946 to 1961) and Alexander Agassiz Professor of Zoology (1947 to 1965) have been documented elsewhere. His friends here will long remember him as he was every day among us — walking down Everett Street in the morning, shoulders hunched, head buried in the morning paper; holding court at 10 o'clock coffee with his countless anecdotes from a lifetime of varied experiences, always seen with a twinkling eye; breaking into song to more fully amplify a particular point; admonishing the occupants of the new MCZ Labs to "come out of the isolation ward"; staggering us with his ageless vitality — these are some of the pictures that will remain vivid with those of us who were fortunate enough to know him.

Dr. and Mrs. Alfred S. Romer in Clairemont, California, November, 1968.



WHAT DID YOU DO LAST SUMMER?

This question elicited interesting responses from some of the MCZ's graduate students who found themselves very far from Cambridge pursuing their research interests last summer. Here are three who have been singled out because they brought back photographs which appealed to the Editor's wanderlust (future travelers: take note!).



Stan Awramik standing among the stromatolites (see below) in Shark Bay, Australia. Photo by Vickie Kohler

Before multicellular life developed, in that distant time known as the Precambrian (over 600,000,000 years ago), sedimentary structures produced by algae — stromatolites — grew and flourished. These structures sometimes reached towering heights and must have dominated much of the marine environment. Today the prime area in the world where this process is still actively continuing is Shark Bay, Australia. A “simulated Precambrian environment” exists because the high level of salinity excludes higher organisms and leaves the algae undisturbed, allowing stromatolites to thrive.

Stan Awramik, a recent Ph.D. recipient whose dissertation is entitled “The origin and evolution of stromatolites” and who is now working with Professor Elso S. Barghoorn, traveled to Shark Bay last summer to conduct the first *in situ* microbiological studies ever undertaken. With the active assistance of Vickie Kohler of the MCZ's Invertebrate Paleontology Department and Steve Golubic of Boston University, Stan set up a field lab, collected material by various means including SCUBA diving, and also shipped quantities of stromatolite material back to Cambridge for more detailed analysis.

Paul Hertz underwent a rigorous and stimulating initiation into various aspects of tropical biology. As one of 20 graduate students taking the course on Fundamentals of Tropical Ecology offered by the Organization for Tropical Studies (OTS), Paul hopped around Costa Rica using varied, and sometimes breathtaking, forms of transportation and became acquainted with all of the major environments of that country (including wet and dry tropical forests, cold tropical mountain tops, marine and river sites) thanks to the strategically-located field stations maintained by OTS. OTS is an international group of 29 member institutions (including Harvard) and accepts graduate students for the course from any institution of higher learning on a competitive basis; naturally, the students' diverse backgrounds and interests add considerably to the educational experience.

A typical day would see the students out in the field by 5:30AM carrying out various field assignments. The afternoon rain provided an excellent time for indoor data analysis and the evenings were devoted to lectures and discussion.



Paul Hertz skinning a Bothrops asper, known popularly as a fer-de-lance, a deadly Central American snake.

Paul, who is a second year graduate student working with Professors Ernest E. Williams and Thomas W. Schoener, emerged from this total tropical immersion with a keen desire to return and continue his studies on tropical lizards and birds.

John Fleagle, a third year graduate student working with Professor Farish A. Jenkins, Jr., returned to the Malaysian jungle to continue his studies on primate locomotion, ecology, and behavior. He renewed his acquaintance with a family of Siamong (gibbons) — they were just where he'd left them the year before — but their preoccupation with a new baby reduced their receptiveness to John's friendly advances.

John's Ph.D. dissertation will be on locomotion and comparative anatomy of Malaysian primates and gathering the necessary data requires many forms of ingenuity. First he shoots copious quantities of film, attempting to follow the animals' energetic routes through the jungle foliage. Upon his return to Cambridge, a large amount of creative effort is expended on raising the funds to have the film developed. Once this has been accomplished, he analyzes the movements frame by frame. Radiography and dissections provide additional insight into the mechanics of locomotion.

John is presently arranging to return to Malaysia for an extended stay to complete the basic research for his thesis. Incidentally, while in the jungle last summer John collected an impressive array of fungus-dwelling beetles. Since Malaysia is not on the route taken by most American entomologists, John's contributions were all new to the MCZ's collections, much to the delight of Dr. John F. Lawrence, the MCZ's beetle specialist.

One of the more spectacular frames from John Fleagle's summer spent capturing monkeys in motion.



A BUMPER CROP FOR THE MCZ'S VERTEBRATE PALEONTOLOGY DEPARTMENT

Professor Farish A. Jenkins, Jr. takes stock of the situation!



It seems that the best way to find something is to be looking for something else — at least this seems to be true for the MCZ's Vertebrate Paleontology Department. Last year it was giant Pliocene crocodilians which were the unexpected bonus on Professor Bryan Patterson's expedition to northwestern Venezuela. This past summer another unexpected find resulted in some exciting additions to the MCZ collections and potentially to our understanding of modern mammals.

During the summers of 1971 and 1972, Mr. Charles R. Schaff, Curatorial Associate in Vertebrate Paleontology, and his field party searched for Cretaceous mammalian remains in the Cloverly Formation of Wyoming and Montana. Although no mammals could be found, they did discover a beautifully articulated ornithischian dinosaur. Last summer, Professor Farish A. Jenkins, Jr. and Mr. Arnold D. Lewis, Chief Preparator, headed a field party to recover the dinosaur — and found Cretaceous mammals!

It was Arnie who made the find, although he was actually looking for a way to drag the blocks-of-rock-containing-dinosaur out of the steep country that adjoins the Prior Mountains near Bridger, Montana. Walking downslope, he could not resist picking up some broken rock fragments; a slight color difference from the normal buff gray matrix was sufficient to trigger the "pick up" reaction of this experienced fossil collector. There were tiny teeth in the fragments and a fortuitous break revealed multiple tooth roots — this was undeniably a mammal! Shortly after, down came the dinosaur across the spot where the mammal had sought refuge for the last 135-million years (see photo).

Professors Crompton and Jenkins and the Vertebrate Paleontology staff are eager to return to the site next summer because there are indications that the site is richer than anyone previously imagined. A sample sackful of sediments was taken from the mammal site, placed in sieves, and flushed with running water. The sample yielded many nut-sized, hard nodules, some of them containing more bones of small mammals. This unusual state of fossilization protects the delicate fossils from disintegration during weathering, or from recovery techniques such as sieving and washing, and greatly increases the chances of finding whole, articulated specimens — an extreme rarity for the early mammals. This unique site could potentially yield material which may answer key questions about the origin and evolution of major groups of mammals. Considerable excavation and laboratory study yet remain to be done, and will rely on well-developed techniques and extensive data already amassed. But as far as fossil collecting goes, serendipity is still queen of that "science".



The hood of an abandoned automobile (duly returned) proved to be a handy sled to transport Tenontosaurus, an ornithischian dinosaur fossilized in fine shape, down the hill side. Guiding their precious cargo are (l. to r.) Andrews Jenkins, Jeri Hodsdon, Farish Jenkins, David Roberts, Thomas Roberts, Philip Bartels, with Arnie Lewis steadying the load from behind.



The lower jaw of a triconodont, a representative of an extinct line of carnivorous mammals. Triconodonts appeared in the late Triassic (180 million years ago) and survived through the early Cretaceous (135 million years ago) — an unusually long span. The largest of the Mesozoic mammals, they were characterized by shearing teeth and pointy snouts. Shearing was achieved by aligning three or more cusps from front to back on each molar, which occluded with a similar tooth above, producing a pinking-shear bite.

ON THE SHELF!

To the casual observer it may appear that collections of specimens in a museum have a pretty static existence — they sit on their shelves and occasionally someone may look at one. Actually, they are in constant flux, being rehoused, moved, exchanged, loaned, or expanded with new acquisitions, either from the field or other institutions, making the job of a curator an active one indeed. In recent months several of the MCZ's collections have undergone significant developments.

Snakes and Lizards

The reptile and amphibian collections are moving into new bottles — modern and air-tight — while the beautiful, but not so efficient, antique ones they've vacated are being sold. So far two-thirds of these collections have made the switch.

Corals

The corals are also enjoying upward mobility (literally!) as they are in the process of transferring from the fourth floor of the "old building" to the fifth floor of the new one, under the supervision of Mr. Dennis Opresko, a Ph.D. candidate at the University of Miami. He is spending this year reorganizing the MCZ's vast collection of corals.

Insects

The MCZ's ant and beetle collections have prospered in recent months due to two important events. A major addition to the ant area arrived on

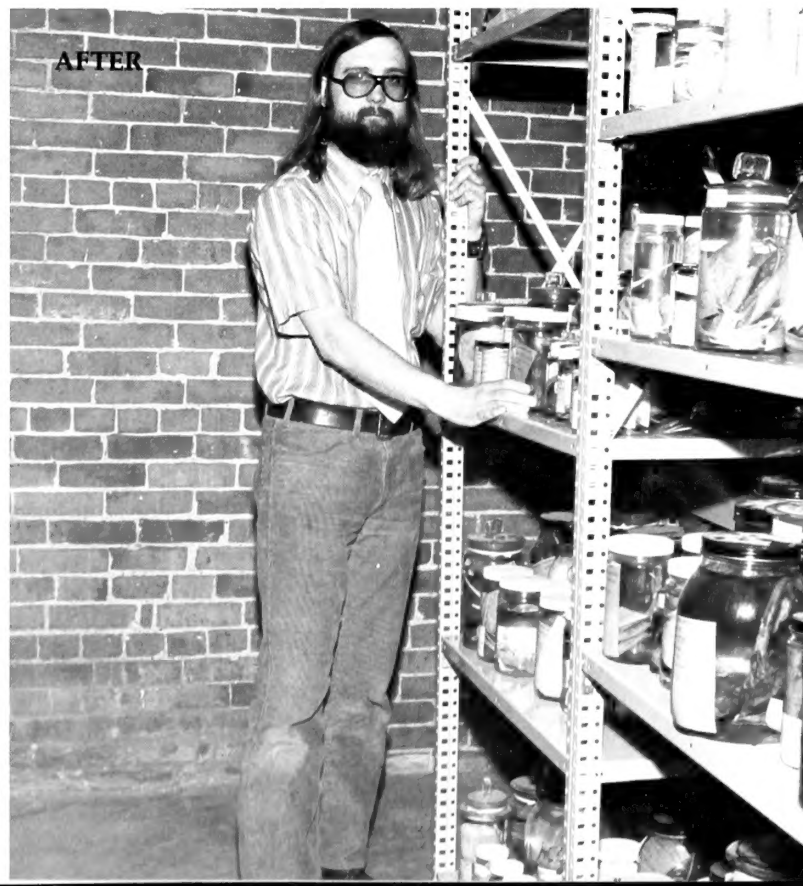
Fish

Since two pictures are worth two thousand words, see the photos below for a full account of the dramatic developments in the Fish Department's renovation program. (The program appears to have included Robert C. Schoknecht, Curatorial Associate.)

October 23 comprising the entire ant collection of Professor Neal A. Weber. Professor Weber, who is retiring from Swarthmore College this year and who was William M. Wheeler's last student, collected ants from all over the world during a forty-year period. He is the world authority on leaf-cutter and other fungus growing ants and the representation of this group in the collection will be increasingly important to economic entomology since leaf-cutting ants are the leading agricultural pests in South America.

A new acquisition does not become useful until it is properly housed. Accordingly, a large, recently-vacated room will now become the center for all the MCZ's unsurpassed collection of ants and we are fortunate that Professor William L. Brown of Cornell, ant specialist par excellence, will be spending three months here to put the ants in order.

As for the beetles, a welcome exchange will now unite the collections of the two beetle specialists whose work forms the basis for beetle systematics in this country. John L. LeConte and George H. Horn were contemporaries who often worked together and exchanged material. The LeConte collection is at the MCZ while the Horn collection has been at the Philadelphia Academy of Natural Sciences. In exchange for a key collection of grasshoppers, the Horn collection will be transferred to the MCZ in gradual stages over the next year. As a result of this swap, beetle studies in Cambridge and grasshopper studies in Philadelphia will be greatly facilitated.



POLISH PALEONTOLOGIST VISITS THE MCZ

Professor Zofia Kielan-Jaworowska's visit to the United States (she was Visiting Alexander Agassiz Professor of Vertebrate Paleontology for the Fall term) was a keenly awaited event in paleontological circles. As head of the eight highly successful joint Polish-Mongolian expeditions into the Gobi Desert since 1962, when a scientific agreement was reached between those two countries, she brought, for Western eyes to see, the most remarkable paleontological discoveries of the last decade. Until Professor Kielan-Jaworowska went to Mongolia, the only remains known of mammals for about 100 million years of their existence were isolated teeth, jaws, and limb bones; her group has found over 150 complete skulls and partial skeletons.

Professor Zofia Kielan-Jaworowska, who has been the Director of the Paleozoological Institute of the Polish Academy of Sciences since 1961, is describing the newly found Cretaceous mammals and has already published preliminary findings in the series "Results of the Polish-Mongolian Paleontological Expeditions" of which she is editor. (Some of the less technical aspects of the expeditions' adventures are described in her book, *Hunting for Dinosaurs* published by MIT Press in 1969.) During her American visit, Dr. Kielan-Jaworowska has availed herself of the opportunity to compare her material with that in this country's institutions — an essential part of her study. She shared her knowledge with colleagues and students in a lecture series entitled: "Vertebrate evolution during the late Cretaceous of Asia and possible migrations between Asia and North America", given in January.

Professor Kielan-Jaworowska began her research career studying invertebrate paleontology, concentrating on jaw apparatuses of fossil annelids (sea worms) and trilobites. However, the momentous results of the Mongolian expeditions permanently changed her focus to vertebrates.

It isn't only scientifically that Professor Kielan-Jaworowska has aroused the curiosity and interest of her American hosts. As Scientific and Administrative Director of a prominent research institution, she is quick to compare the working conditions of women in the two countries. Professional discrimination between sexes in Poland was totally abolished after World War II and there are at least two professional fields today in which women outnumber men, namely, medicine and dentistry. Curiously, men are given compensatory preferential treatment for medical school admission because were places not reserved for them while they served their military duty, women would make up almost the total student body. However, although most women work outside the home because two salaries are essential for a family to live in relative comfort, it is still unusual for a woman to reach a position of prominence. In a country where fulfilling the needs of daily life is cumbersome, if not downright difficult, it takes an unusual amount of talent, ambition, and just plain physical energy to combine the



Professor Zofia Kielan-Jaworowska

roles of professional woman, wife, mother, and homemaker. While men have nothing against successful wives, they are much less prepared to share the domestic burden than their American counterparts. "Obviously," Dr. Kielan-Jaworowska points out, "it will take a long time to change centuries of tradition."

Professor Kielan-Jaworowska is married to Zbigniew Jaworowski and they have a 14 year old son.

HUMAN EVOLUTION IN A NUTSHELL

(for Steve Gould)

Once upon the evolutionary stage
Of anthropoids
Dryopithecus was all the rage.

Although some pithy lines were later banned,
The one that made
The *Gorilla* my dreams was merely Panned.

Meanwhile, selected hominoids foresaw the
silver screen.

Australopithecus came close,
But *Homo* stole the Holocene.

John M. Burns
October 24, 1973



FROM THE FIELD STATION

By William K. Newbury

Since arriving here last Fall, I have talked to many individuals both within and outside the Museum about the opportunities for research, education, and recreation that exist in the Estabrook Woods, a large tract of woodland in the Concord-Bedford area which is part of the MCZ's Concord Field Station lands. The possibilities seem endless and my task is to match people to programs in a mutually beneficial way.

Several steps have already been taken. The Field Station has produced a series of "Guides to Resources" which describe the existing biological, geological, and meteorological conditions in the area. A detailed four-color map is also now available which will be of great help to those who wish to find their way around the woods on more than a superficial level. A proposal to the National Science Foundation has been submitted which would provide funds for undergraduates to conduct research studies in the Woods during the summer. The proj-

ects will yield valuable information while the undergraduates, with the instruction of faculty members, will acquire field research techniques.

The location of the Estabrook Woods in a heavily populated area offers an ideal opportunity to study the role man plays in shaping the "suburban woods". A history of local land use, census taking of the flora and fauna, a study of the present recreational use of the area (and ensuring that this does not collide with research and conservation interests) are among the projects that will be undertaken soon by faculty members in conjunction with amateur naturalists, such as the Friends of the MCZ. The local schools have also been enlisted to participate in these educational programs.

We are devoting a room in the new Field Station building to collections of natural history materials from the woods. This will also be a convenient meeting place for local naturalists.

In the Spring issue of the *MCZ Newsletter* I hope to be able to report that some of our ambitious plans have become reality.

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Editor: Gabrielle Dundon

Photographers: A.H. Coleman

Paula Chandoha

GET YOUR PEACOCK FEATHER AND SHELLS HERE!

Ms. Susan Nelson helping a few of the thousands of children who consider the Museum Shop a highlight of their visit to the MCZ and emerge waving its unofficial banner — the peacock feather! Sue became manager of the Shop in 1972 and thoroughly enjoys the treasure-hunting aspect of her job. She has managed to assemble a remarkable assortment of unusual items from around the world. Jewelry made from reindeer horn, shell, ivory, oxen teeth (as well as gold and silver) appeals to adults while the inexpensive peacock feather and shells are perennial favorites of the young. Collectors can find fossil, mineral, and shell specimens, mounted butterflies, insects in amber, and much more. There is also a wide variety of decorative craft work. Proceeds from the Museum Shop help to support the MCZ's exhibition program.



Photo by Rick Stafford