

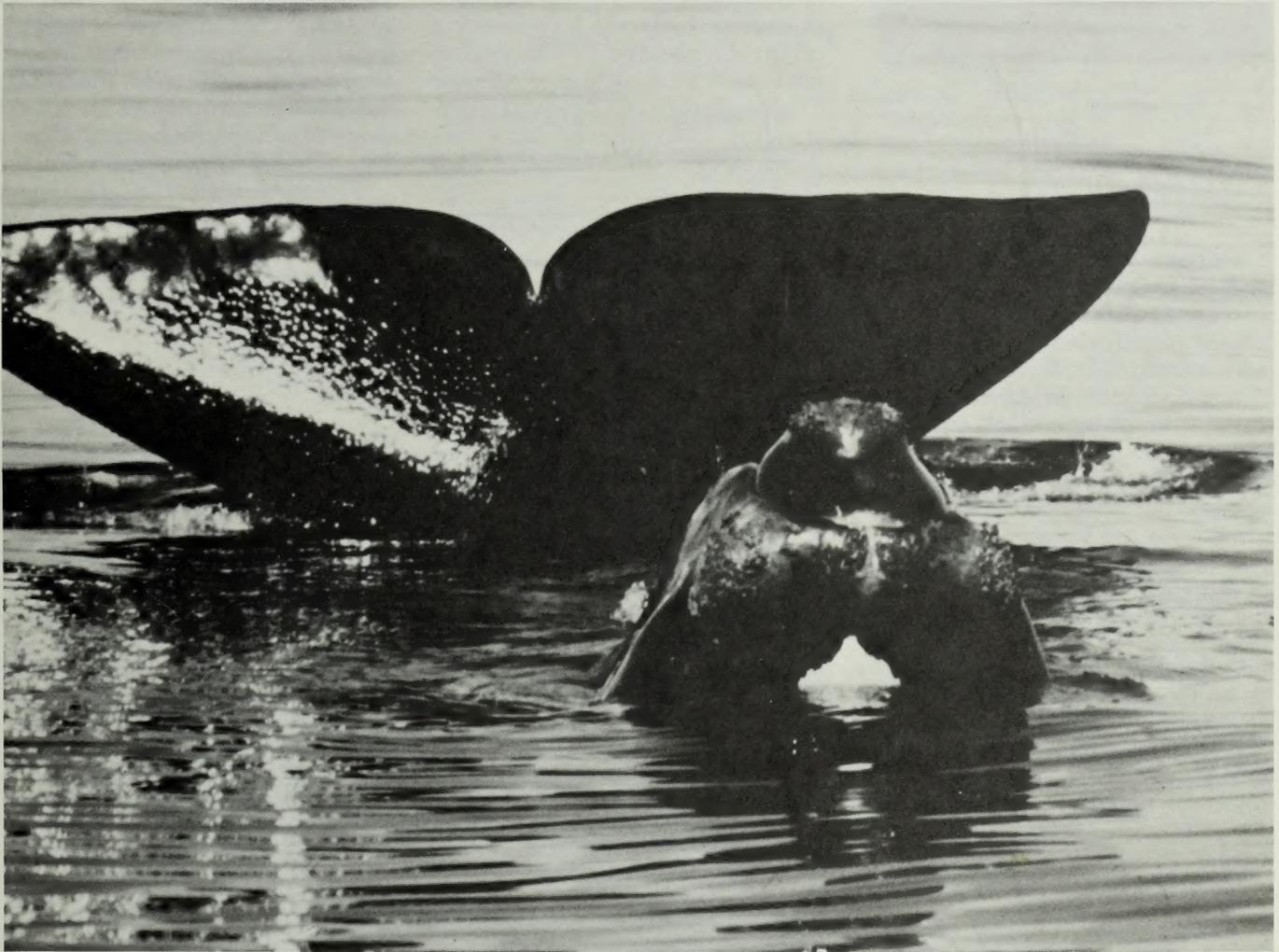


MCZ newsletter

MUSEUM OF COMPARATIVE ZOOLOGY

Harvard University
Cambridge, Massachusetts
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The Right Whales Were There



Right whale calf posturing and demonstrating its remarkable flexibility. Note the facial collosities which are present at birth and the white "chin".

Photo by Dotte Larsen

The first Friends of the MCZ trip (August 29—September 4) to see right whales (so called because they were the "right" whales to kill in the days of New England whaling) in the Bay of Fundy was a spectacular success. In three days on the water, guided by whale expert Scott Kraus, 17 to 19 right whales were sighted, a sizeable percentage of the

remaining population in the north Atlantic, estimated at around 200, including three mother/calf pairs and two courtship groups. Several of these acrobatic whales came close enough to the boat to allow the 14 participants to view them from all sides. The group also saw finback whales, harbor porpoise, and harbor seals, and 49 species of birds including a feeding frenzy of thou-

sands of northern phalarope. The two land days included visits to the Roosevelt cottage on Campobello Island, peat bogs, berry patches, and a Lubec sardine canning factory. With a few refinements based on this year's first experience, this trip will undoubtedly become one of the MCZ's most popular annual offerings.

Marjorie Sturm Retires



Marjorie Sturm surrounded by three MCZ directors, (l. to r.) A. W. Crompton, James J. McCarthy, and Ernst Mayr at the farewell party in the Harvard Faculty Club on October 22.

Marjorie Sturm, Administrative Officer of the MCZ, retired on October 31 after more than 22 years of dedicated service. As chief administrator to three directors, Alfred S. Romer, Ernst Mayr, and A. W. Crompton (and a brief association with current director James J. McCarthy), she played a central role during a period of dramatic growth for the MCZ. The acquisition of the Concord Field Station, the building of the laboratory wing, the growth of the MCZ population from about 60 in 1960 to over 150 in 1982, and the growth of the annual budget from \$400,000 in 1960 to close to \$3,000,000 in 1982 resulted in ever-increasing administrative challenges. Fortunately for the MCZ, Marjorie Sturm, with her solid judgement and sense of humor, was there to meet them.

In her remarks at a farewell party in her honor, Marjorie Sturm pointed out that "this is an early retirement. I am not as old as Ronny Reagan—I just want to start collecting Social Security before he tells me I don't need it." Former director A. W. Crompton captured the prevailing mood by observing: "The MCZ will somehow survive without her, but it will certainly never be the same."

Marjorie Sturm is moving to Cape Cod and looks forward to being able finally to devote more attention to her much-neglected golf game.

Frank M. Carpenter at 80

For Frank M. Carpenter, Fisher Professor of Zoology *emeritus*, Alexander Agassiz Professor of Zoology *emeritus*, and Honorary Curator of Fossil Insects, his 80th birthday was a gala celebration. Surrounded by 16 of his 31 living graduate students, who had traveled from as far away as New Zealand to be present, he had the honor of having the year's first meeting of the Cambridge Entomological Club dedicated to him. Professor Thomas Eisner of Cornell, an outstanding Carpenter graduate student, spoke on *Exploration and Diversity in Nature*.

"Frank Carpenter's achievement is historically unique," according to Edward O. Wilson, Curator of Entomology. "We will probably not see, at least in the foreseeable

future, such a period of expansion in American evolutionary biology during which one person will be able to train so many Ph.D.'s, place them so well, and have such a far-reaching impact on a subject, in this case, entomology."

Carpenter's retirement ten years ago affected only his teaching and committee activities. His research and collection improvement efforts have continued unabated. Due to his energetic dedication, the MCZ's fossil insect collection is the second largest in the world, exceeded only by a collection in the Soviet Union.

The establishment of "The Frank Morton Carpenter Fund in Paleoentomology" to continue the curatorial work was announced on the occasion of his 80th birthday.



The assembled students with their professor at the Frank M. Carpenter celebration at the Faculty Club on October 12, 1982. The year of the award of the Ph.D. degree is given. First row (l. to r.) Thomas Eisner '55; William L. Brown, Jr. '50; Frank Morton Carpenter; Richard J. Goss '52; Edward O. Wilson '55. Middle row (l. to r., shoulder to shoulder) Beverly A. Holloway '59; Fung-Ying Cheng '52; Charles Porter '67; Carl F. Moxey '73; Stewart Peck '71; Guy L. Bush '64. Back row (l. to r.): Alfred F. Newton '73; Lee A. Miller '69; Graham B. Fairchild '42; Philip Adams '58; Charles L. Remington '48; Charles S. Henry '73.

Romer Hall Fundraising Nearing Goal

Now well into the second year of work, the Romer Hall of Vertebrate Paleontology is taking shape. The completion of the project is anticipated by the end of June, 1983. Due to unexpected savings in cost of materials, the total budget will be \$70,000. With the generous support of many Friends of the MCZ, \$60,000 has been raised to date. A final push to raise the remaining \$10,000 will take place in the next few months. If you have been planning to contribute to this worthwhile project, there is still time! Checks should be made payable to the Museum of Comparative Zoology and mailed to Friends of the MCZ, Museum of Comparative Zoology, Harvard University, Cambridge MA 02138 with a note designating the contribution for the Romer Hall.

Harvard Museums Exhibit at Museums Fair

As part of the kick-off for the Museums of Boston (also known as "The Mob") *October is Museum Goers Month* campaign, the seven Harvard museums, including the MCZ, Botanical, Mineralogical and Geological, Peabody, Semitic, Busch-Reisinger, and Fogg Art Museums, took part in a three-day fair at Boston's Faneuil Hall Marketplace. United for the first time in an attractive collage-style exhibit designed by Edward Haack of the MCZ Exhibit Department, the Harvard contributions also included demonstrations by staff members on fossils and minerals and an appearance by the University pep band which attracted much attention from the Quincy Market lunch crowd. This first joint effort of the seven Harvard museums also resulted in the publication of a combined brochure which will be helpful in clearing up the confusion surrounding the identity and location of the various museums for tourists—and many residents as well.

Director to Serve on Cambridge Science Advisory Board.

James J. McCarthy, MCZ Director, has accepted an invitation to serve on the Science Advisory Board of the Cambridge Public Schools. A strong advocate of museum involvement in public education, McCarthy welcomes the opportunity to participate in Cambridge's science curriculum planning.

Children's Programs

A new series of Saturday morning (9 to 11 year olds) and Wednesday afternoon (6 to 8 year olds) children's programs entitled "Skeletons in our Closet" is currently being taught by Anndy Dannenburg Rosen, educator and biologist. New programs on Animal Defenses: "The Best Defense is a Good Offense", and Mammals: "Aardvarks to Zebras" will be offered in January and February. Call Dale Seecof Pastor at 495-2341 for more information.

Library Receives Preservation Grant

An MCZ Library project to organize and microfilm Agassiz materials and correspondence has been funded from a University Library grant awarded by the Strengthening Research Libraries Resources Program of the U.S. Department of Education. The award of \$9,500 will provide for the microfilming of materials stored in the MCZ Library Archives and selected materials now on deposit in Houghton Library, Harvard's Collection of Rare Books and Archives. The project will be completed by the end of June, 1983.

The MCZ Newsletter is published two or three times a year by the Museum of Comparative Zoology, Harvard University, Oxford Street, Cambridge, Massachusetts 02138; James J. McCarthy, Director.

*Editor: Gabrielle Dundon
Photographer: A. H. Coleman*

Public School Science Partnership Formed

The MCZ is providing a natural sciences program for two local Cambridge schools this year. Students in the third and fourth grades at the Peabody School and the third, and combined fourth and fifth grades at the Agassiz School are studying a comprehensive curriculum, both at their schools and at the MCZ. Arlene Nichols has joined the Public Programs staff to teach this program. An experienced teacher who formerly taught at Elbanobscot and in a Water, Air, Land, and Solar Energy Project (Title VI-C), she is the author of an environmental science curriculum for urban students.

Both the MCZ and Cambridge Assistant Superintendent Richard Woodward hope to expand this program to reach other Cambridge Schools next year. The program was made possible in part by a donation from Harvard's Office of Government and Community Affairs and by contributions from the Cabot Family Charitable Trust and the Cambridge Trust Company.

Museum Guide Program

Marion Carey of the Boston Children's Museum is conducting this fall's training program for 15 new museum guides. A natural history specialist and experienced teacher, Carey is also providing resource materials for a new program on volcanoes in conjunction with the current Mt. St. Helens exhibit in the Geological Museum.

MCZ Library Open Evenings

Starting this fall, the MCZ Library is open until 10:00 PM on Tuesdays and Thursdays to members of the Harvard community. These new evening hours were made possible for the 1982-83 academic year by a gift from Visiting Committee member David Arnold. At the Spring, 1982 meeting of the committee, he was impressed with the case made by graduate students for greater access to the library.

Two Memorable Tanzania Safaris



A solitary male wildebeest waits on his territory for the females to appear. Proximity to a shade tree often proves to be an irresistible enticement.



Wildebeest and zebra as far as the eye can see at the height of the annual wildebeest rut on the Serengeti.

Photos by Sally Davidson

Prepared for rugged conditions, the Friends of the MCZ's first "roughing it" adventures this summer in Tanzania proved to be surprisingly comfortable. The two groups, the first accompanied by Emily Hubbs Scott and the second

by Gabrielle Dundon, found that the truck had upholstered seats, the food was plentiful and delicious, and everyone quickly became adept at putting up and taking down a tent in varying conditions. The rewards exceeded all expectations.

The daily sightings of large numbers of African game with ample time to stop and observe social behavior, accompanied by animated narration by scientific guide Dr. Richard Estes, soon became a pleasant routine. Interspersed were moments of high drama such as when a martial eagle swooped down and plucked a Thompson's gazelle calf, the ensuing battle between eagle and mother, and the happy ending of calf and mother trotting off together being watched by the eagle, now perched in a dead tree. Naturally, no one had their camera ready to record this unexpected sequence. Another heart-stopping moment took place for the second group in Ngorongoro Crater, when a female rhinoceros who looked ready to give birth (although it is difficult to be sure given their naturally rotund contours) threatened to charge the truck. This time all cameras were ready and many identical rhino portraits were viewed at the reunion. The annual wildebeest rut was in full swing when the second group arrived and the sheer numbers and the all-pervasive "big hum"—the reverberations and harmonics resulting in the cumulative constant sound produced by hundreds of thousands of wildebeest—left an incredible impression on the group.

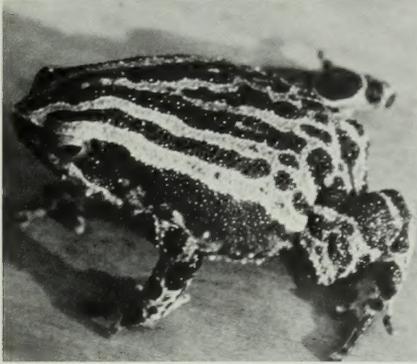
Two Tanzania safaris are planned for 1983 based on this year's superb experience.

Mammal and Fish Courses for Adults to be Offered

A repeat of Curatorial Associate Karsten E. Hartel's course on fish identification will be offered in January and a new course on mammals of the world by Curatorial Associate Maria E. Rutzmoser will be introduced in March. Both these courses will take place on one evening a week for nine weeks. For more information, call the Public Programs office at 495-2463.

Second China Field Season Planned

Dr. James D. Lazell, Jr., Associate in Herpetology, conducted two field expeditions to tropical China this year, the culmination of eight years of negotiation and planning. The 1982 expeditions resulted in a highly promising beginning of a new active exchange of specimens and publications with Chinese colleagues, unprecedented since before World War II, including 40 species of herps not previously represented in the MCZ collections. Information on China's relatively unknown insect and spider fauna was also gathered.



Tropical burrowing frog, Kalophrynus pleurostigma

Plans for the 1983 season include three three-week trips in April, May, and June with such specific goals as: to investigate the status of rare, endangered, and little-known species; to begin mark-and-recapture studies of mammals, reptiles, and amphibians; to begin line transect bird censuses and potential nesting censuses; and to continue to document invertebrate species.

The April and May teams will return to the 1982 sites, spending one week at the Dinghuson Man and Biosphere Reserve and about two weeks on Hainan Island. Dinghuson is a well-documented tropical moist forest reserve with about 200 known bird species and such notable mammals as leopard, serow, pangolin, and palm civet. On Hainan Island the team will visit forest reserves for macaques, Eld's deer, black-faced gibbon, and birds.



Drawing by R. Gowen Tiffney

Giant salamander from China, discovered by Pere Armand David, which reaches a length of about 3 feet. This is by far the largest living amphibian.



Li River, near Yangsuo

Photos by J. Lund

There is a good possibility of finding sea-snakes, crab-eating mongooses, and such remarkable birds as the magnificent night heron.

The June team will explore new territory in the Xi Shuang Banna Forest Reserve in the Mekong River drainage for Yunnan. Members will spend several days at Kummon, Yunnan's capital, and the small town of Siyii in the far southwest.

Opportunities exist to participate in these field projects. Friends of the MCZ who are interested in joining the research teams will pay the same tax-deductible share-of-costs as other team members; however, \$100 of the total will be a contribution to the MCZ. For detailed information and a registration form, call Gabrielle Dundon at 495-2463.

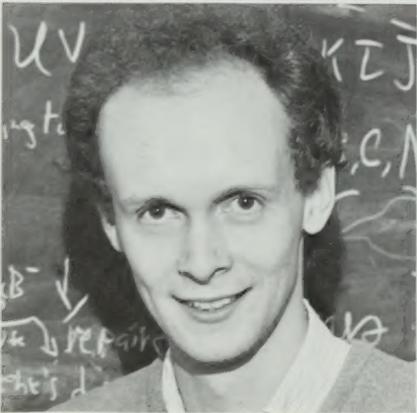
Visitors

Montserrat Aguadé



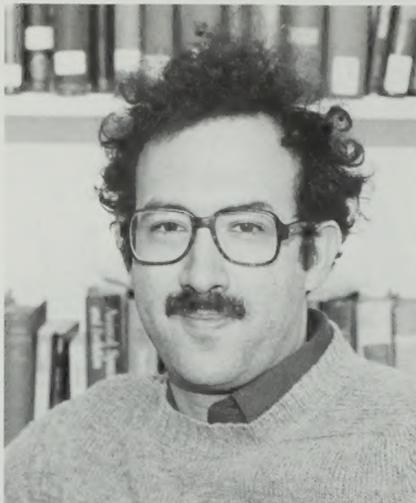
Montserrat Aguadé, Associate Professor of Genetics at the University of Barcelona, has spent the last eight months working with Marty Kreitman of the Population Genetics Department. She has been learning DNA sequencing techniques which she will bring back to her group in Barcelona. She has also been compiling a genomic library for the European species of the common fruit fly, *Drosophila subobscura*, to be used to screen for different genes.

Andrew Pomiankowski



Andrew Pomiankowski of Oxford University is spending the year in the MCZ's Population Genetics lab with the aid of a Kennedy Fellowship. As one of a dozen annual recipients of this award from the Kennedy Foundation of England, Pomiankowski is using the opportunity to study the history of biology with Professors David Kohn of the History of Science Department and Richard Lewontin of the MCZ.

Malcolm Kottler



Now that some of the furor over creationism has died down, Malcolm Kottler is returning to his main interest, the history of evolutionary biology and genetics. Kottler, who is Associate Professor of the History of Science and Technology in the Bell Museum of Natural History at the University of Minnesota, organized a symposium on "Creationism and its Challenge" for the History of Science Society this year and delivered a major paper on the treatment of evolution in high school biology textbooks from 1920 to 1982.

As a Visiting Scholar at the MCZ this year, Kottler plans to conduct extensive taped interviews with Ernst Mayr, his MCZ sponsor. This will be the first oral history project with Ernst Mayr, whose contributions over his 60-year career constitute a major chapter in modern evolutionary thought. The conversations will focus on the origin, later development, and current status of the "evolutionary synthesis."

Kottler, who devotes as much time to following current developments in biology and talking to biologists as he does to studying the history of biology, says he would not have come to Harvard this year if he could not be in the MCZ. The museum setting is an essential stimulus to his work, and he is particularly pleased to be surrounded by the insect collections in his fourth-floor office since one of his interests is the history of the mimicry theory.

Richard Krejsa



For Richard Krejsa, the MCZ is a haven. Reimmersing himself in his specialty, vertebrate skin, after eight years in the forefront of environmental politics in California, he is spending his first sabbatical in 14 years from California Polytechnic State University in San Luis Obispo in the MCZ's Fish Department this year. His first task is to rewrite his chapter on skin for the fourth edition of *Hyman's Comparative Vertebrate Anatomy*, edited by Marvalee H. Wake. He is auditing classes, both to review general biology and to observe teaching techniques, spending many hours in the MCZ Library, and he anticipates giving several seminars on fish skin and scale development before the end of his stay in the MCZ's Fish Department this year.

Krejsa has been the leading political opponent of the Diablo Canyon Nuclear Power Plant project, beginning his opposition in 1973 and leading to an influential role in California governor Jerry Brown's public stand against the nuclear plant in 1980. He resigned from his elected office as Supervisor (the California equivalent to County Commissioner), Fifth District, San Luis Obispo County in 1980, an office he had held for almost eight years, for health reasons and has returned to full-time academic activities as Professor of Biological Sciences.

Marjorie Reaka

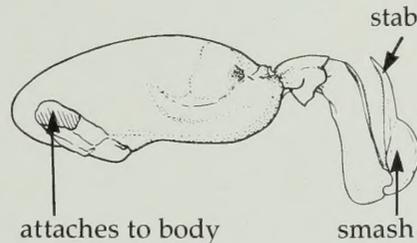


Marjorie Reaka, Associate Professor of Zoology at the University of Maryland, is paying a repeat visit to the MCZ this year as a Visiting Scholar sponsored by Edward O. Wilson. After receiving her Ph.D. at the University of California, Berkeley, she spent a productive postdoctoral year here in 1975, is delighted to be back, and looks forward to giving seminars during her stay.

Reaka is using stomatopod crustaceans, commonly known as "mantis shrimps" because they resemble preying mantids, as her research animals not only because they are intrinsically fascinating animals but also because they are ideal subjects for the examination of important behavioral, ecological, and evolutionary questions. Her current field study site is in St. Croix, where mantis shrimps live in natural coral cavities and are

limited to two or three inches in length by the sizes of the holes in their coral habitats. Sand and mud-dwelling mantis shrimps excavate their own burrows and grow to lengths of a foot or more in their less restrictive surroundings.

These shrimp are spectacular fighters, armed with heavy hammer-like claws that are spread in colorful displays and can easily break through the thick glass used for laboratory flasks, the hard shell of a mollusk, or the skeleton of another mantis shrimp. The armored tail is rolled up in front of the animal as two combatants whirl, coil, and trade blows. Reaka is interested in the role that these aggressive species play in coral reef



The hammering raptorial appendage. The hammer (note the stabbing tip and calcified, smashing base) is open here (as in combat or feeding), but is normally folded back against the part that attaches to the body of the shrimp.

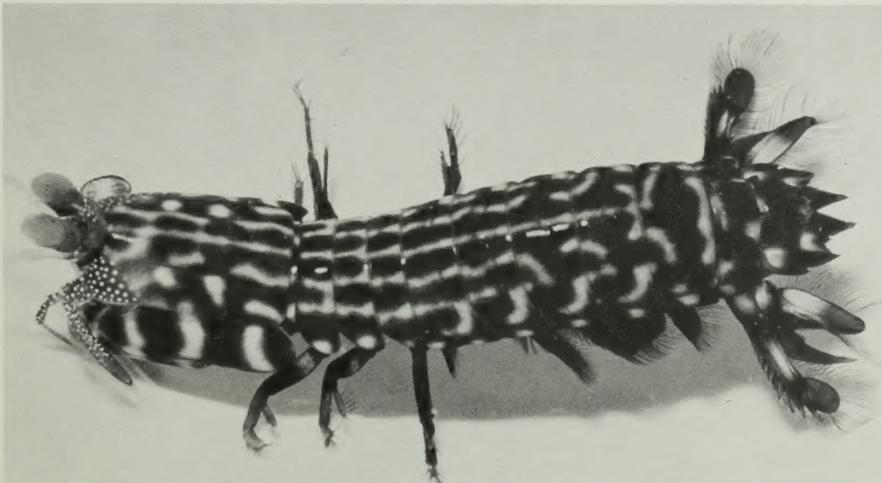
communities. Using saturation diving techniques (which involve aquanauts living in an underwater habitat for a week, whereupon their habitat becomes saturated with nitrogen and they are able to make much longer diving excursions than

normal because they do not need to come to the surface), Reaka has been able to show that the intense fighting behavior of these shrimps is linked to the shortage of space in the reef. Field experiments demonstrate that food does not limit these reef species and that, contrary to theory, a single resource, space, limits many different species with broadly overlapping niche requirements.

Reaka is also interested in isolating the factors which affect rates of evolutionary change, including morphological change within lineages and species diversification. A number of variables, including habitat type, (reefs vs. mud or sand bottoms, for example), competition, complexity of social behavior, depth, temperature, latitude, body size, and dispersal have all been implicated in altering rates of evolution. However, the only factors that significantly affect evolution in stomatopods are body size and larval dispersal ability. Reaka can show statistically that small species with restricted dispersal potential are much more likely to be endemic to a local region and are much more likely to undergo major evolutionary shifts in structure and habitat than large species with the potential for long distance dispersal.

Ant Larva Collection Donated to Insect Department

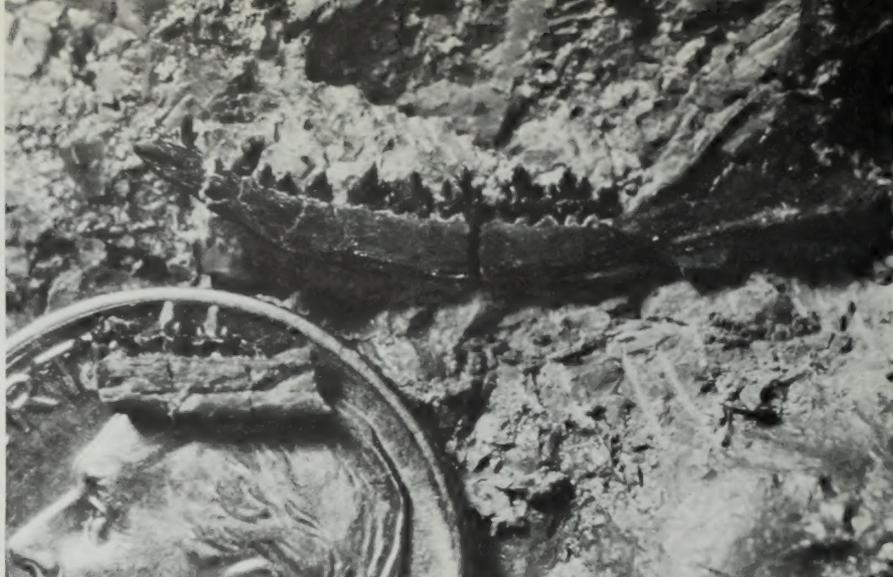
The gift by Professor George C. Wheeler and his wife, Dr. Jeannette Wheeler of their ant larva collection is an important addition to the MCZ's insect collections. According to Curator Edward O. Wilson: "The collection is by a wide margin the most complete of its kind in the world, has been the basis of the Wheelers' lifelong study of anatomy and classification, and should continue to serve as an invaluable resource for future research." The collection has been placed in the William C. Wheeler Room (no blood relation) together with a nearly complete set of Professor Wheeler's published papers for the use of visiting specialists.



Mantis shrimp; the raptorial claw is folded close to the body.



This plaster jacket contains the skull and jaw of one of the as-yet-unnamed, newly discovered "triconodont" mammals. The unusual viewing hole was for those who could not wait to get back to the lab to feast their eyes on the prize jaw.



Close-up of the jaw with a dime for scale.

Photo by A. H. Coleman

Vertebrate Paleontology Field Team Triumphs . . .

This year's field season was the most successful to date in the Vertebrate Paleontology Department's continuing search for early mammal remains. Farish Jenkins, Charles Schaff, and Robert O'Hara of the MCZ and Will Downs and Scott Madsen of the Museum of Northern Arizona added five complete jaws, two partial skulls, and some postcranial bones to the first partial, three-toothed jaw that was last year's spectacular find. These expeditions are funded by the National Geographic Society.

. . . Despite Hardships



En route to Yellowstone Park, the unusually late snows severely hampered fossil collecting.



A shade fly was needed to enable workers to pick up rocks without burning their fingers in the 110-degree heat in this site on northeastern Arizona Navajo Indian land.

Photos by Charles Schaff



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