THE SMITHSONIAN
# TORCH

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# OPENING A NEW WINDOW TO THE UNIVERSE

## *Splendors, Thrills Of Mountain Climb*

**By Edwards Park**

Advice to the non-scientific: If you flunked freshman physics and cannot tell a gamma ray from a black hole, and if, despite your astronomical illiteracy, you are invited to visit the Multiple Mirror Telescope on Mt. Hopkins, ACCEPT!

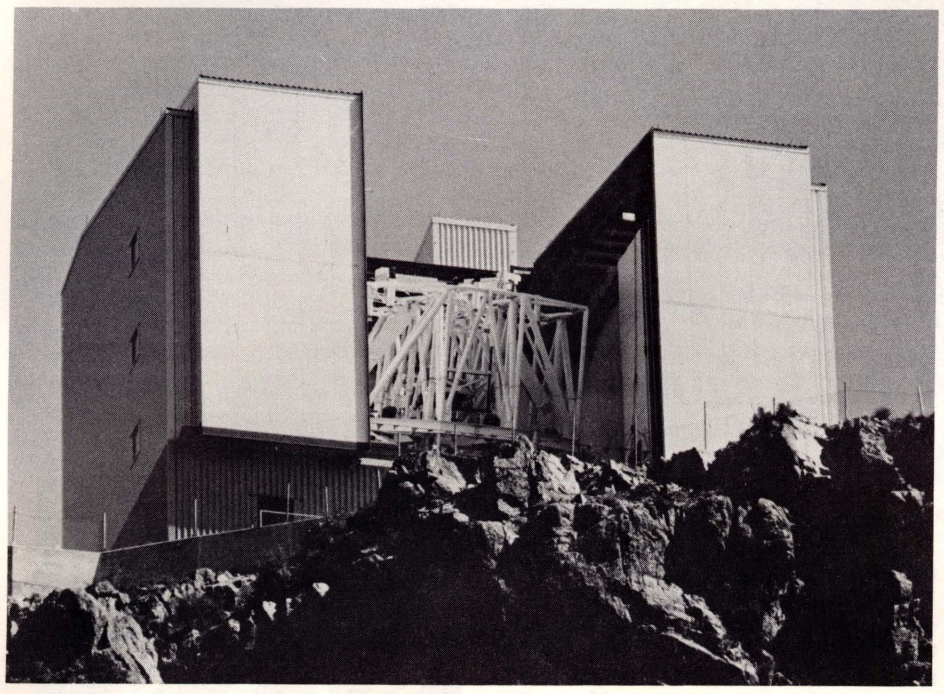
In fact, if you have *not* been asked out to Tucson to see this newest Smithsonian establishment, pull every string to wangle an invitation. Not only will you learn a smattering of science rather painlessly, but you will experience a memorable journey to the top of a splendid 8,550-foot southern Arizona peak where bird and animal life abound, where vegetation reflects the upward progress from one growth zone to another. Here's how my own personal ascent of Mt. Hopkins, in mid-March, with Dan Brocious of the Hopkins staff as guide, came off.

We left Tucson very early in the morning and drove south on the Interstate toward Nogales. Hopkins rose before us along with Mt. Wrightson, which is about 500 feet higher. Both peaks were named for prospectors. The country is . . . well, it's Arizona at its best: the open land rising gradually between peaks, then dropping suddenly into a canyon; the mountains slate blue, then glinting as the sun hits them; the sky clean and clear except for a smudge of smog from a copper smelter.

One of the early morning glints was the white side of the Multiple Mirror Telescope, a tiny, bright square on the peak of Hopkins. It was hard to believe we'd ever reach it. But at Amado, under the mountain, the Smithsonian flag was flying and somehow the whole prospect seemed feasible.

We switched cars out in the old Amado corral, mounting the saddle of a hard-nosed van sired in Detroit and hence more or less unloved. This nondescript led us away from the trail for a while—since the bridge to the mountain had washed out—and to a ford across the Santa Cruz at Fickett's Crossing. At this altitude—river bottom—we were in the realm of cacti and Gambel's quail, and

*(See 'Mt. Hopkins,' Page 3.)*



**The Multiple Mirror Telescope looms above the craggy peak of Mt. Hopkins.**

## Stuart Portraits Stir Debate

Negotiations for the purchase of Gilbert Stuart's portraits of George and Martha Washington from the Boston Athenaeum were, in the words of National Portrait Gallery Director Marvin Sadik, "99 percent complete" when, on April 5, the Boston Globe broke the story, with these results:

Front-page headlines across the country, statements by public officials, network TV stories, editorials in big-city newspapers, letters to the editor, high-level discussions and, finally, the launching of a fundraising campaign to keep the paintings in Boston and a joint agreement by the Athenaeum and the Smithsonian to suspend negotiations until the end of this year.

The portraits, which Stuart himself copied some 50 times, were painted from life during Washington's second term as president. The paintings remained in the artist's studio until Gilbert Stuart's widow and daughter sold them to the Boston Athenaeum in 1831, 3 years after Stuart's death. Both are displayed at the Boston Museum of Fine Arts, where they have been on loan since 1876.

The Athenaeum first offered the portraits for sale to the Boston Museum in 1974 for $1.6 million to be paid over a period of 5 years, but that institution decided against the purchase at that time and instead bought nine other works of art from the Athenaeum for a total of $1.2 million.

Negotiations involving the Smithsonian, its National Portrait Gallery and the Athenaeum began 14 months ago.

In a statement on April 11, Under Secretary Michael Collins said:

"The National Portrait Gallery became involved in acquiring the . . . portraits . . . only when it was informed that, subject to appropriate legal determinations, a decision had already been made that the portraits were to be sold.

"Under these circumstances, it was and is

*(See 'Portraits,' Page 5.)*

*How Do You Fit In?*
*See Evolution Hall, Page 3.*

## *Telescope Probes From Mt. Hopkins*

The Multiple Mirror Telescope, or MMT, a radically new type of telescope using six separate mirrors with a light-gathering capability comparable to a heavier, more costly single disk, will be dedicated by the Smithsonian Institution and the University of Arizona on May 9 in Tuscon.

A joint federal-state project, the telescope has been constructed on the 8,550-foot summit of Mt. Hopkins at a Smithsonian facility near Amado, 35 miles south of Tucson.

The purpose is simple. To extend the boundaries of the known universe, astronomers have a need for ever larger telescopes to reveal those even fainter objects at greater distances. But simply scaling up existing telescopes is not feasible because large structures eventually reach a point where they collapse under their own weight.

Rather than using a single large mirror, the MMT is essentially six separate Cassegrain reflecting telescopes, each 72 inches in diameter, working in concert so the light gathered by each is brought to a common focus. Together, they create a light-gathering capability comparable to a single disk 176 inches in diameter.

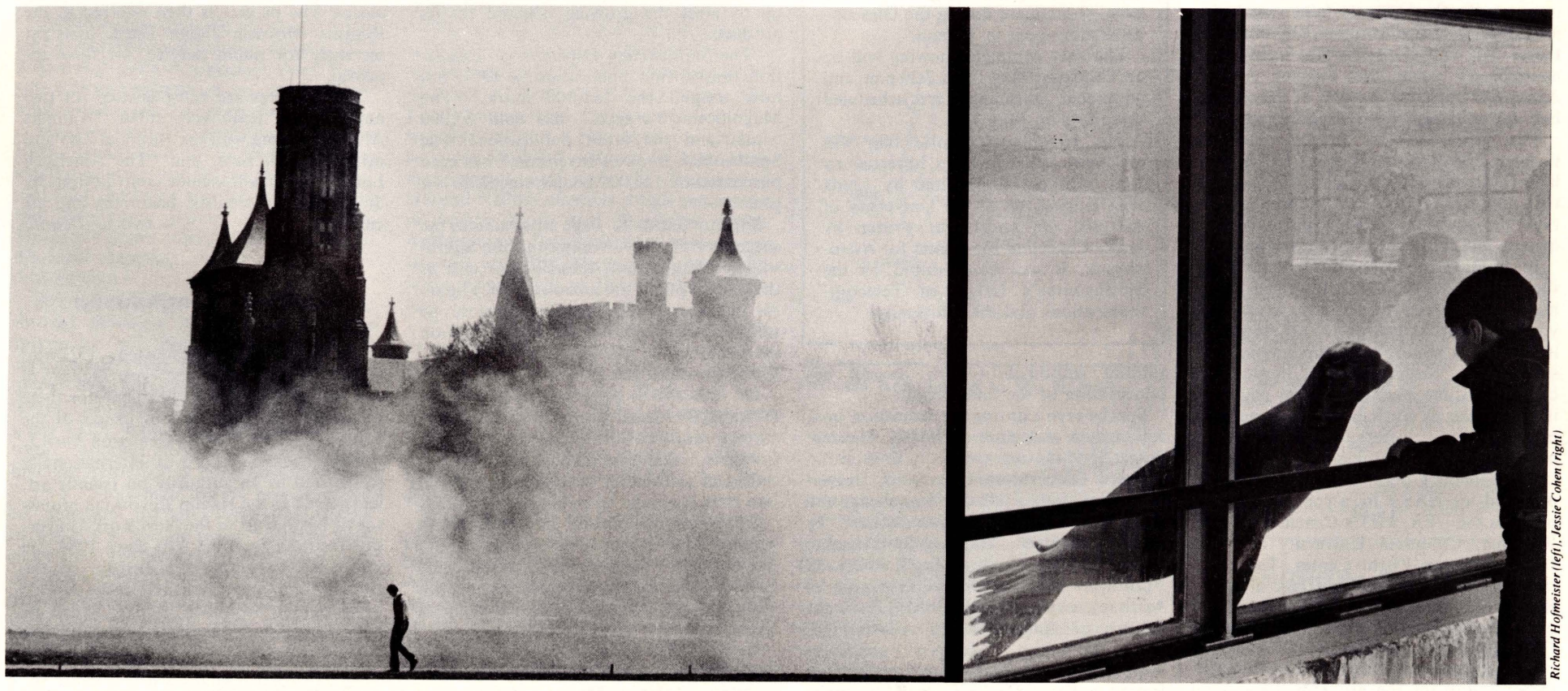
An electronic control system, utilizing smaller movable mirrors, lasers and on-line computers, superimposes the images and then maintains them as the telescope changes position to track stars.

The world's third largest optical telescope, exceeded only by the 200-inch Hale reflector in California and a 236-inch Soviet telescope in the Crimea, the MMT may be the prototype of even larger telescopes of similar design in the future.

Engineering innovations, including the use of an unusual rotating building, have made it possible to create in the MMT a very large, yet relatively compact and lightweight instrument at a significantly lower cost than conventional telescopes of comparable size.

Once full operations begin in the summer, the MMT will be used primarily for both optical and infrared observations of

*(See 'MMT,' Page 2.)*



*Richard Hofmeister (left), Jessie Cohen (right)*

*BLUEGRASS . . . After the perils of winter '79, spring arrives on the Mall in unique forms: a fertilizer mist enshrouds the Castle; on the ground, a strange chemical reaction caused by the combination of lime, fertilizer, rain and temperature variations temporarily turned the ground blue. The Park Service said the Mall, battered by tractors and snows, should soon be its old green self. Meanwhile, at the Zoo, youngsters preview a sea lion pool at Beaver Valley. See story on innovative installation, Page 4.*


*NASA Photo*

**The bright blob in the lower right is the quasar 3C273; in the upper left is the fainter image of a new quasar seen at a distance of more than 10 billion light years.**

# Einstein Satellite Finds Quasars

**By James Cornell**

Scientists at the Harvard-Smithsonian Center for Astrophysics, analyzing more than 500 images received from the HEAO-2 (Einstein) satellite, have seen the brightest, most distant and most powerful objects yet observed to emit X-rays: quasars estimated to be more than 10 billion light years from Earth.

The intense X-ray emission from the quasars, strange star-like objects that radiate inordinate amounts of energy for their apparently small size, suggests that they may contribute significantly to the widespread low-level background of cosmic X-ray radiation seen throughout the skies.

The discovery could have important implications for theories of cosmic evolution, for it would mean that the proposed mass necessary to "close the universe" is not present in the form of hot gas and, indeed, may be "missing." The finding lends support to theories that the universe may expand forever.

The satellite, launched last November, is the second in a series of High Energy Astronomical Observatories sponsored by NASA to survey the sky for X-rays, associated with some of the most powerful activity in space—although, having been safely absorbed by the Earth's atmosphere, invisible to ground-based observers.

Einstein carries the first telescope capable of producing focused images showing the structure of X-ray objects. Previous experiments could only detect the approximate position and intensity of objects.

The distant quasars were discovered by CFA scientists using the high-resolution telescope in its so-called serendipity mode to make deep space surveys. The objects appeared as bright point sources in otherwise featureless fields and, when compared with optical charts of the same sky regions, corresponded with extremely faint visual objects later identified as quasars by observations of their redshifts made by astronomers using the 4-meter Anglo-Australian telescope. Several of the objects had not previously been identified as such.

The most distant quasar detected through optical means is about 15.5 billion light years away; but, with HEAO-2, scientists now believe they can pinpoint in X-rays the position of even more distant quasars for study with optical telescopes.

In addition to observations of quasars, the Einstein telescope has observed "normal" stars similar to the sun, a class of young hot stars with strong X-ray emissions in their outer atmospheres, the remnants of supernovas, "cosmic bursters" in globular clusters, distinct sources of X-ray emission in other galaxies much like our own and the most distant clusters of galaxies yet observed by any instruments.

The satellite's observational program is operated for NASA by a consortium that includes the CFA, MIT's Center for Space Research, Columbia University and the Goddard Space Flight Center. The principal scientists are George Clark of MIT, Robert Novick of Columbia, Stephen Holt of Goddard and Harvey Tananbaum of CFA. Riccardo Giacconi of CFA is the principal investigator with overall scientific responsibility for the program. Leon Van Speybroeck, also of CFA, designed the telescope optics.

The satellite, though operating only 4 months, has doubled the number of known X-ray objects in the universe. More important, the rapid increase in the sensitivity of X-ray telescopes in little more than a decade is comparable, Giacconi says, "to the 350-year evolution of the optical telescope from Galileo's crude refractor to the 200-inch Palomar reflector."

Giacconi first proposed the use of telescopes for X-ray astronomy in 1960. He and his group discovered the first X-ray star in 1962 and designed and operated the first X-ray observatory in 1970.

## 'MMT'

*(Continued from Page l.)*

distant galaxies. New electronic detectors for producing video images and the spectra of these celestial objects will be used on the telescope.

Astronomers at the University of Arizona and the Smithsonian Astrophysical Observatory, responding to the need for larger instruments and the problem of creating them, began a decade ago to explore innovative designs that would not depend on structural strength alone to produce sharp images.

Work on the MMT began in 1972, with the University's Optical Sciences Center preparing the mirror blanks for astronomical use, the University's Steward Observatory designing the active optics and guidance systems and the Astrophysical Observatory preparing the site, constructing the mount and building and assuming responsibility for overall administration of the joint project.

Special events during the dedication week will include a lecture by MMT Director Peter Strittmatter (May 7, 7:30 p.m., Steward Observatory Classroom, University of Arizona); a talk on "Stonehenge and Its Cousins: Megalithic Observatories?" by Owen Gingerich, Harvard-Smithsonian Center for Astrophysics (May 8, 7:30 p.m., Flandrau Planetarium, University of Arizona); a symposium on "MMT and the Future of Ground-Based Astronomy" (May 9, 9 a.m., Modern Languages Auditorium, University of Arizona) and a lecture by Frank Drake, Cornell University (May 10, 7:30 p.m., Main Auditorium, University of Arizona).

### MMT Film

A new half-hour film, "Mirrors on the Universe:The MMT Story," will have its premiere during the telescope dedication week in Tucson.

The first complete showing will be on Thursday, May 10, at 7:30 p.m. and additional screenings are scheduled beginning on May 15.

The 16-millimeter color film was produced by Ted Offret, directed by Alex Hankocy and edited by Linda Jean August, all of the University of Arizona; the script was written by James Cornell of the Center for Astrophysics. It was co-produced by the Smithsonian's Office of Telecommunications and the University.

# Photos of Earth from Above Capture Astonishing Patterns

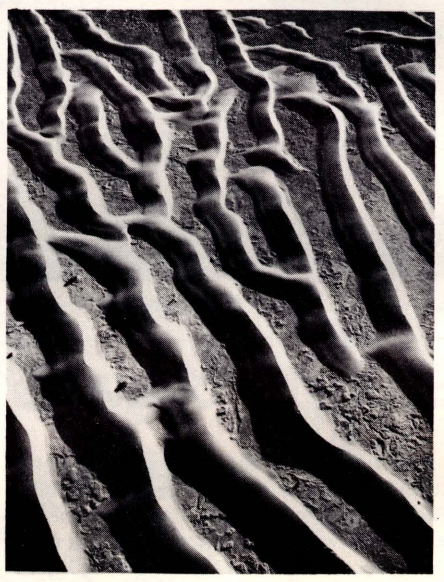
**By Rita Bobowski**

The 20th century has offered travelers in air and space new and startling perspectives of their planet.

Earth-bound visitors to the National Air and Space Museum can share the airmen's experiences through photography in an exhibition entitled "Our Beautiful Earth: The View From Air and Space," opening May 5. The exhibition features more than 100 photographs, including the work of four contemporary aerial photographers and photographs taken by National Aeronautics and Space Administration astronauts and by its Landsat satellite.

James Dean, NASM's curator of art, admitted to "kicking around the idea" of an aerial photography show for a number of years. Before coming to the Museum, he had worked at NASA where he handled many of the Earth views taken by astronauts during manned space flights.

While preparing the Museum's art gallery for its July 1976 opening, Dean heard that an artist named Robert Bucknam had been doing aerial landscapes. "Thinking they were paintings, I contacted Bucknam for a look," he said. "What we got were not paintings, but photographs. And they were stunning. We began then to plan this exhibition."



**Death Valley sand dune by William Garnett**

Bucknam is one of the photographers featured in the exhibition. The others are William Garnett, Georg Gerster, and George Hall. Garnett, Gerster and Bucknam photograph from small aircraft at altitudes less than 1,000 feet; Hall works from a blimp.

"As we began accumulating material related to aerial photography," says Bill Good, also of NASM's Art Department, "certain names kept popping up. The most prominent was William Garnett, who's been in the field since the early 1950s."

The NASM staff was able to review and select a large number of photographs and transparencies by each of the photographers—except for Garnett. "We had no idea what Garnett was sending us until the very end," Good said. "Then, when the photographs started to arrive, every day was like Christmas. We opened crate after crate, knowing exactly what we would find. Every piece was sensational."

The photographers work at altitudes of under a mile, so Dean decided to expand the show by including pictures from farther out in space. Working with both the Lyndon B. Johnson Space Center in Houston and the Goddard Space Center in Greenbelt, Dean and Good looked through thousands of photographs and finally narrowed their choices to approximately 20 of each.

Rounding out the show is a small historical section which features reproductions of a few of the "firsts" in aerial photography. Included are the first successful aerial photograph taken in black and white in 1860 (a view of Boston from a balloon), the first in color in 1930 (a photo of the Capitol taken by the National Geographic Society) and the first picture of the crescent Earth and moon together in a single frame taken by a Voyager spacecraft in 1978.

Located on the first floor in the Flight and Arts gallery, the new exhibition will be in place for approximately 1 year.

On the second floor of the gallery will be a selection of pieces which were arranged by Dean, Good and the third member of the Art Department, Mary Henderson.

## Concert

The prize-winning New World String Quartet of the Symphony United Nations will present a concert in the Commons Lounge on Thursday, May 24, at 6 p.m. The concert will be followed by a discussion entitled "Power of Music—Instrument of Social Change." The event is part of a seminar on music and international affairs to be given at the Wilson Center in conjunction with the International Year of the Child. Smithsonian employees are invited to attend the concert and discussion. No tickets are required.

# *Exposition Books Sales at Half-Million*

Sales from the first three publishing ventures of the Smithsonian Exposition Books now total 483,000, and the office is gearing up to meet the growing demand for its products.

"The Smithsonian Experience," Exposition Books' first publication in 1977, has now topped the 282,000 mark. "The Magnificent Foragers" has sold 63,000 copies and the latest publication "The Smithsonian Book of Invention," has been purchased by 143,000 people since late last year.

Director James K. Page Jr. attributes the success of the three volumes to the Smithsonian's reputation. Associates as well as the general public are anxious to keep up on the activities of Smithsonian curators, he said, and scholars outside the Institution are eager to be associated with these attempts to reach the public.

Dr. Edward S. Ayensu, director of the Office of Biological Conservation and consulting editor for "The Magnificent Foragers," said that Exposition Books is skilled at translating complicated research into lucid language for public consumption.

"Scientists are usually very leery about watered-down explanations of their work," Ayensu said. "We were very nervous when Exposition Books was first established, but after the scientists saw 'The Smithsonian Experience,' our fears were allayed."

Before Exposition Books begins a new publishing project, ideas undergo a period of study and testing. Naional Associates are surveyed to determine their interest in various Smithsonian-related topics. After a subject has been chosen, the editorial staff begins to produce picture and text material and to prepare more detailed test mailing pieces. The project is then referred to the Regents, through Julian Euell, assistant secretary for public service, for final approval.

Test mailings are being devised for two new books, tentatively titled "Animals Alive!," dealing with the National Zoo and other modern zoos, and "The American Land," which will include contributions by Smithsonian ecologists, historians and art curators. *—Johnnie Douthis*

## Richard Ettinghausen

Dr. Richard Ettinghausen, 73, who served on the staff of the Freer Gallery of Art for 23 years and as head curator there from 1961 to 1967, died of cancer at the Princeton (N.J.) Medical Center on April 2.

Ettinghausen, who was internationally recognized as an authority on Islamic art, had served as the Hagop Kevorkian professor of Islamic art at the New York University Institute for Fine Arts since 1969. He was also consultative chairman of the Islamic art department of New York's Metropolitan Museum of Art, where he had supervised the installation of the Islamic galleries.

Before moving to New York, Ettinghausen was adjunct curator of the Los Angeles County Museum of Art from 1967 to 1969.

# Charles Darwin: 'There Is Grandeur in This View of Life . . .'

By Thomas Harney

The genesis of "Dynamics of Evolution," the impressive permanent exhibit hall opening May 18 at the Museum of Natural History, occurred back in 1974 when MNH scientists conducted a study to assess the need for future changes in exhibit halls and found themselves troubled by the fact that Museum-goers were offered no explanation of evolution and how it occurs.

"We decided to make remedying this a priority," MNH Director Porter Kier said. "Evolution is critical to all aspects of this museum. Involving anthropology, botany, paleobiology and zoology, it is the one unifying theme in the natural sciences."

The resultant "Dynamics of Evolution," with its dramatic dioramas, exhibit "towers" and multitude of specimens ranging from insects to the skull of a blue whale, is the first major exhibit hall in any American science museum dedicated to explaining evolutionary processes.

"We visualize the evolution hall as a starting place for visitors to the Museum," MNH Exhibits Chief Gene Behlen says. "After seeing the processes that produce evolutionary divergence, they'll be able to view the evidence—the variety of divergent life forms in the surrounding halls—in the light of how they evolved."

And so, over the next 5 years, all of the older natural science exhibits on the Museum's main floor will be thematically integrated with the new evolution hall. The east dinosaur gallery and the smaller fossil halls around it will be closed beginning this month for renovations. This area, documenting the evidence of evolution visible in the fossil record, is scheduled to reopen in phases between March 1980 and December 1981.

Renovations in the west Life in the Sea gallery and the mammal and bird halls surrounding it will begin in 1981. This area, documenting the evolutionary divergent lives of today's animals of the land, sea and air—including the inhabitants of a living coral reef—is scheduled for completion in 1982.

The hall represents years of intensive work by scientists and exhibit staff. A committee of MNH scientists began organizing concepts for the hall in 1975.

Senior Curator Dr. John Burns, an evolutionary biologist and former staffer at Harvard's Museum of Comparative Zoology, outlined a teaching scheme he had developed that ties together key evolutionary concepts, and it was adopted as the hall's theme.

Next, a curatorial committee—Burns and Drs. Beryl Simpson, Richard Thorington, Nicholas Hotton, Donald Ortner and Duane Hope—had to tackle the problem of illustrating the evolutionary process.

"It was very difficult," Burns says. "It is much easier to have spectacular specimens to start with and build your story around them—the way we generally do our halls. This time it was the reverse. We had a story and had to find the best specimens for getting it across."

Collaborating with the scientists in this search were Office of Exhibits designer Gail Singer and research associate Peter Haas, who had the challenge of organizing the exhibit visually and acquiring the specimens.

Many of the hall's principles, it became clear, would have to be illustrated with small specimens, and Singer and Haas worried that the hall's size would overwhelm the installation. Rising 55 feet to the Museum's upper stories, the hall is one of the most imposing exhibit spaces at the Smithsonian.

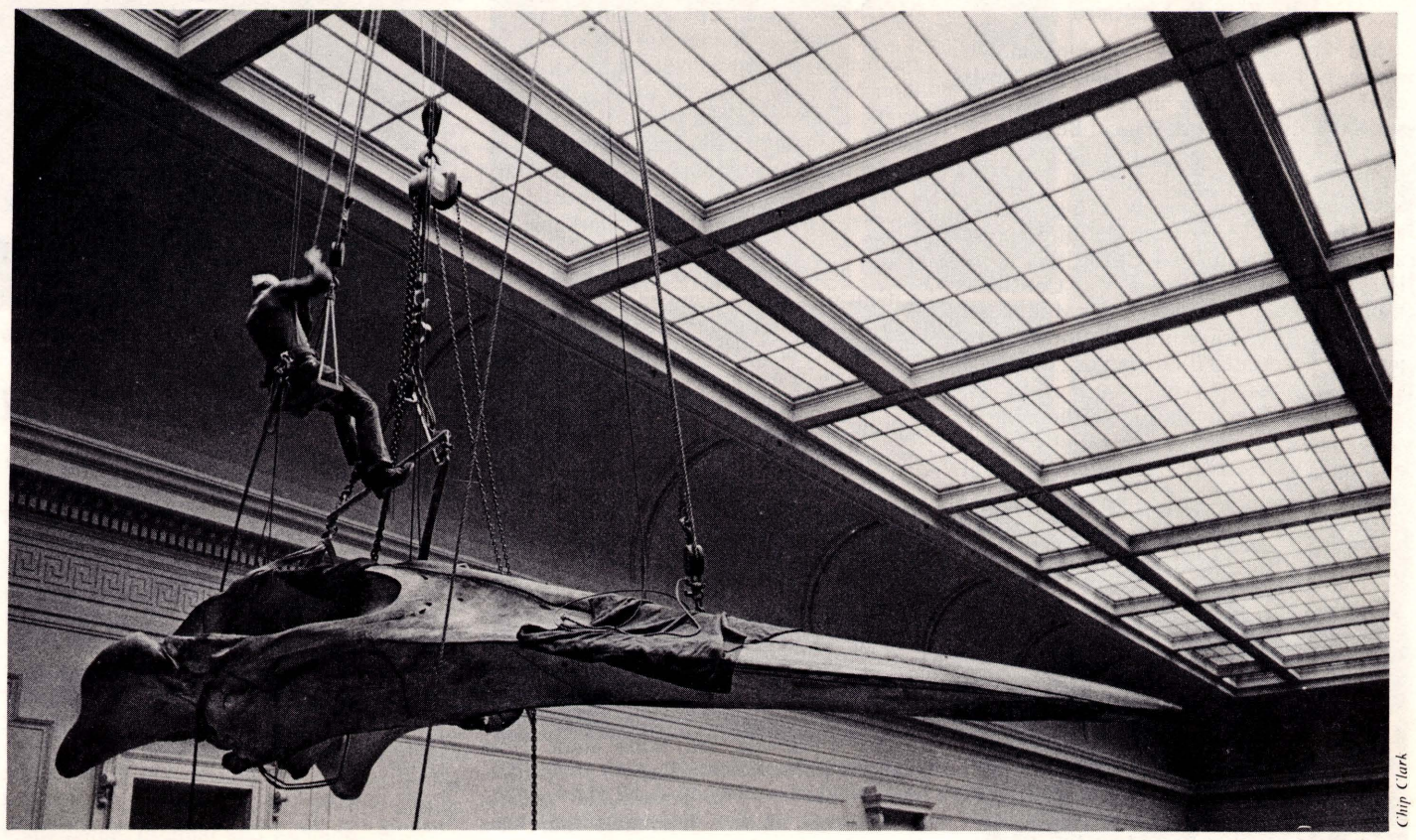
Balance and visual impact were achieved through dioramas and half a dozen large specimens, including mounted bears and elks. One of these, a woodland scene, required hand mounting 15,000 "white oak leaves," (simulated by starched pieces of green cloth with wire ribbons) on "oak trees." Another diorama, a kitchen scene, involved freeze drying 130,000 cockroaches.

Two 25-foot-high towers were designed to "puncture" the hall's vertical space. One of these is a "people tower" covered with more than 100 larger-than-life-size photos of faces and parts of faces. They dramatize genetic variation (such as blue or brown eyes, black or brown hair), traits passed from generation to generation by genes. The photos were taken by photographer Kim Nielson, and among the faces one will recognize many SI staffers.

The second tower is covered with life-size photographs of dogs and illustrates how artificial selection by human beings has influenced canine evolutionary history—from a single ancestor, the wolf, to species ranging from dachshunds to wolfhounds.

The integrity of the hall's architectural detail was maintained. The hall, for many years a dark brown color, was repainted a grey-green, giving it a light airy atmosphere. The lighting fixtures over the ceiling skylight, which had not worked for many years, were repaired, and a balcony was constructed at the hall's south end so that visitors could survey the entire exhibition from above.

Visitors are shown a vast organization of natural objects—insects, shells, crustaceans and reptiles, antlers and pelts and a 19-foot-long skull of a blue whale among them—all products of evolution. Proceeding through the exhibit hall, visitors move sequentially through areas that illustrate the basic steps of evolution as scientists believe this intricate process operates.



Chip Clark

**"Big Blue," a huge blue whale skull that was a favorite exhibit early in this century, takes its place in the evolution hall.**

At the exit of the new "Dynamics of Evolution" hall is a quotation from Charles Darwin's "On the Origin of Species" (1859):

"There is grandeur in this view of life . . . and . . . whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved."

## *MNH Men, Women Protest Male Panel*

More than 270 Smithsonian men and women in the Museum of Natural History recently signed memoranda to Secretary Ripley, Museum Director Porter Kier and David Challinor, assistant secretary for science, protesting the appointment in January of an all-male search committee to find a new director for the Museum. Kier has announced plans to leave the MNH directorship and return to his scientific research effective June 1.

The memos expressed "grave concern that no women were appointed to the search committee for the director of the Museum of Natural History. Since the Equal Employment Opportunity Commission has outlined a plan to encourage and promote qualified women to high level management, and since the Museum of Natural History employs a high percentage of women (more than 60 percent of the Anthropology Department are women), we strongly urge that this group's interests be fairly represented on the search committee."

Responding to the memos, Challinor said he planned to discuss the addition of a woman member at the selection committee's May meeting, adding that he sees "no particular problem in having women on the search committee." Challinor also said that the committee would be ready to consider qualified women as candidates for the directorship.

Area chiefs from the Center for the Study of Man, the departments of anthropology, botany, entomology, mineral sciences and vertebrate zoology, the Office of Exhibits and the SI Libraries each forwarded the memos to Ripley, Challinor and Kier.

The Smithsonian Women's Council protested the fact that there were no women among the eight members of the committee in a mid-January memo from chairperson Rosemary DeRosa to Challinor.

## 'Mt Hopkins'

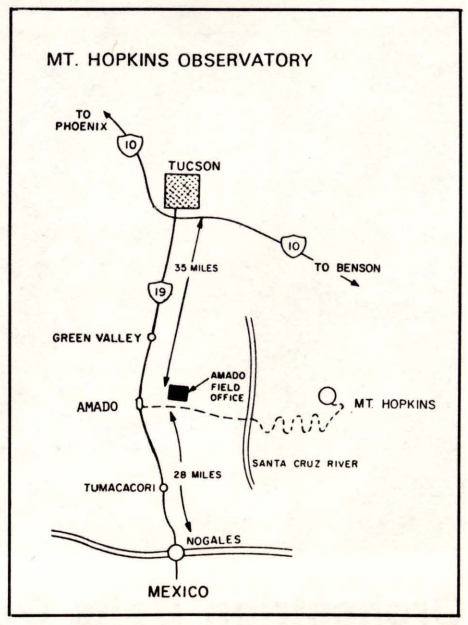
*(Continued from Page 1)*

along the river we passed wrecked and upended vehicles that had been dumped on the banks to anchor the dikes needed last winter to safeguard the railroad tracks from flooding out.

The climb starts slowly. The cacti change subtly from saguaro to things like barrel cactus and staghorn. Beside the road was the old mining road which first gave the MMT builders a way, however hazardous and uncertain, of reaching the peak. When the new road was being built, Dan Brocious told me, Indian relics were uncovered. I reacted with interest.

"Don't get your hopes up," he said. "Just tin cans and stuff from the turn of the century."

The road began climbing in earnest. We




**The road from Tucson to Mt. Hopkins**

seemed to bound upward, ears squeaking and snapping in adjustment. The landscape changed. Yucca, a few junipers, a cottonwood in a gulch, indicating water.

We pulled in behind two lumbering trucks hauling some sort of building supplies up to the top. They couldn't easily haul over to let the van pass, and we didn't want to eat their dust, so we pulled up at a small turn-out, shut off the engine and dismounted.

The silence was tangible. We were three-quarters of the way up and could look back on the Santa Cruz Valley, spread below, and up at the peak with its big white square structure, the MMT gleaming against the deep blue sky, dominating everything. Looking to its right, we could see the 10-meter reflector, the 24-inch reflector in its turret and the 60-inch. A white circle against the rocks was the target for the laser beam—a way to "sight it in."

The slopes around us were scarred with occasional rock slides, some of them reseeded with alfalfa to prevent erosion. This was a grand place to see wildlife, and Dan and I looked for the jump of a deer or perhaps the quickturning of a watching bobcat. Nothing. Just a red-tail hawk floating silently above and the tiny rustle of a ground squirrel darting away. The sun was warm and the air crisp. A lovely spot.

From there on we began to enter the establishment. The road passed a water pump, then we wound around a road grader, always at work keeping tumbled rocks off the surface. We dipped down for a moment, passed some portable houses, then climbed again, suddenly, toward the stars and the devices that monitor them.

*Edwards Park is a member of Smithsonian magazine's board of editors.*

## Cash for a Good Idea

Museum of Natural History botanist David Lellinger won a $200 cash award for a suggestion expected to save the Museum $12,000 annually in its energy bill.

Lellinger noticed that huge amounts of heated air in the winter and cooled air in the summer are lost at the Museum's east and west loading docks because it's necessary to keep the roll-up doors there open for long periods of time. This, he pointed out, could be avoided by installing an inner door at each dock. The Office of Plant Services and MNH agreed, and the new doors are being installed. An electrical control system will permit the outer doors to open only when the new inner doors are closed. The new doors are expected to cost about $4,000.

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# New Valley Arrivals Hold Court

By Kathryn Lindeman

Sea lions and otters frolicking in the water, beavers building a dam, gray seals catching a quick nap under water—these and other sights will be part of Beaver Valley which opens at the National Zoological Park on May 4.

The new exhibit area, covering about 8 acres in the valley between the Bird House and the Small Mammal House, was more than 2 years in the making, Zoo Construction Representative Donald L. Muddiman points out. General contractor for the project was Associated Builders, Inc., of Hyattsville, Md.

There are five pools for sea lions, gray seals, timber wolves, beavers and otters—averaging 9 feet in depth and holding a total of 632,000 gallons of water filtered through systems in two buildings, partially underground and hidden by rocks and trees.

Ilene Berg

**Daryl Boness (left) and Keeper Leader Scott Rutherford raise the curtain for a sea lion debut at the Zoo's new Beaver Valley.**

At one Valley entrance, a series of smaller ponds is surrounded by boulders retrieved from nearby Metro subway construction. Other rocks and boulders around the pools within the Valley were fabricated of fiberglass-reinforced concrete by Rock and Waterscape Systems, Inc., under the direction of President Julian George and his staff in Westminster, Md.

George has patented his process for making realistic-looking artificial rocks with a mixture expelled under pressure from a gun. The color is applied in powder form while the concrete is still wet.

Two underwater viewing areas, with double glass in the windows as a safety precaution, will allow visitors to watch the playful otters and sea lions swimming by. Some of the animals have been in their pools since March and seem to be enjoying it.

Two dens—one each for the otters and the beavers—are built into the rocks, with interior viewing possible through windows in the outer wall. The beaver den is equipped with a tunnel allowing the beavers access directly from the pool. Curator Daryl J. Boness noted that "a fair number of zoos have tried den viewing with remarkable success."

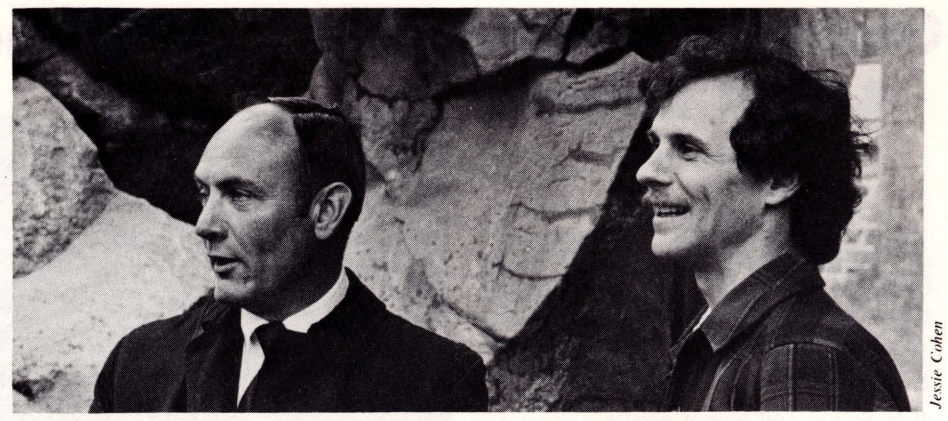
The beavers have a head start on building a dam, too. Water pumped to the top of a rock formation rushes downward through a channel over a concrete-and-twig dam begun by Zoo staff. Boness hopes the rushing water and freshly cut trees provided will encourage the beavers to continue work on the dam.

Residents of Beaver Valley—seven California sea lions, three gray seals and one pair each of beavers, otters, bush dogs and timber wolves—have come to the Zoo from all over the country: the beavers from the Metropolitan Toronto Zoo; the otters from a dealer in the South; the timber wolves, former National Zoo residents, from the French Creek State Game Farm in West Virginia.

The 2-year-old sea lions come from Hannah-Barbera's Marineland in California where a stranded-animal project rehabilitates marine mammals that have been abandoned or separated ffrom their mothers. "Because these young animals have had a traumatic start in life," Boness said, "Marineland staffers try to distribute them to zoos and other interested facilities in the country rather than returning them to the wild." The rehabilitation program uses bottle-feeding, hand-feeding or teaching the animal to eat for itself, depending on its age, to help get the animals into good physical condition.

The gray seals, averaging in age from 5 to 6½ years, come from the Naval Oceans Systems Center in San Diego. The Center was researching the possibility of using gray seals for underwater work, such as turning a valve or attaching marker balloons to sunken objects, but abandoned the effort after determining that these animals are less predictable than sea lions and not as food-motivated.

Putting animals on public view involves ingenuity and a special approach. "In the case of the beavers, primarily nocturnal animals, there are a number of things," Boness said, "we might do to get the beavers active during the afternoon: daytime feeding in the yard to tempt them out, closing off the den or putting a light in the lodge. Animals, like people, can be very adaptable."



Jessie Cohen

**Donald Muddiman (left) and Daryl Boness with fabricated rocks at Beaver Valley**

# *Training Animals to Cooperate*

Administering eye drops to a sea lion could be a major undertaking without Keeper Leader Kayce A. Cover's training program at the National Zoo's Beaver Valley. Cover is teaching keepers Lisa Burton, Pat Larkin and Lisa Stevens how to train the seals and sea lions to follow them to a holding pen, lie still for an examination or allow medications to be administered.

"This hasn't been done all that frequently before with seals and sea lions," Curator Daryl J. Boness said. "But without such training, the alternatives are draining the pool and netting the animals or using a fishing net that will reach across the pool, netting the animal and hoisting him out.

"As the sea lions and seals learn to present themselves for medication or allow a harness to be put on, we eliminate, for many minor ailments, the necessity for physical restraint, putting them in a squeeze cage or even tranquilizing them, which requires a respirator close at hand.

"We use a targeting pole with a big red tip on it. With this, we can direct the animal to go anywhere by leading him with the wand in front of his eyes."

"Our idea is not to manhandle the animals or distract them," Cover said, "but to show them what we want by way of the targeting pole. That way there is no chance for frustration or mistakes."

Training gives the animals mental stimulation and an occupation, Cover added. "In a zoo, they can't follow normal hunting and foraging practices, but with this training, they have someone with which to interact. It contributes to better health by reducing stress and helping the animals overcome disease."

The program will be of help to visitors, too, because trainers can explain what is happening and show visitors the personality of the animal as it interacts with people and other animals. Normally this would require hours of observation.

Training often starts out with food—it gives the animal a reason to come over to the trainer. But many animals are not that food-motivated and seem to enjoy the challenge and interaction with people more than the food, Cover said. "One thing we don't do is deprive the animals of food even if we are using food in training. We may not give them the fish right away if they don't cooperate, but they will always be fed their regular meals."

"Everyone thinks of sea lions as friendly animals when, actually, they can be very aggressive—we had to teach them to respect our stand. Now, along with the other behaviors they've learned, we have taught them not to bite."

Besides the sea lions and seals, Valley keepers have been working with the polar bear, Mary. Polar bears, as marine mammals, will also be part of Beaver Valley.

"I like to use Mary as an example to show results of our training program," Cover said, "because polar bears are non-contact animals. No one is going to get into that cage. We had to get 3 tablespoons of Mary's hair to be analyzed because she had a hair condition that needed treatment. We thought of all kinds of intricate schemes like suspending someone in the air over the bear to cut off some hair—strangely enough, we couldn't get any volunteers. But Lisa Burton had worked long enough with Mary so that eventually the bear would put her paws where Lisa wanted her to. Using toenail clippers, Lisa got the 3 tablespoons of hair by telling Mary to put her paws in a certain place."

Cover, who had trained dogs and worked as a veterinary technician at a number of facilities, began training marine mammals at the Scripps Institute of Oceanography where she worked with seals and sea lions. Along with her work at the Zoo, she also trains monkeys to aid handicapped people.

*—Kathryn Lindeman*

# Diving For Debris

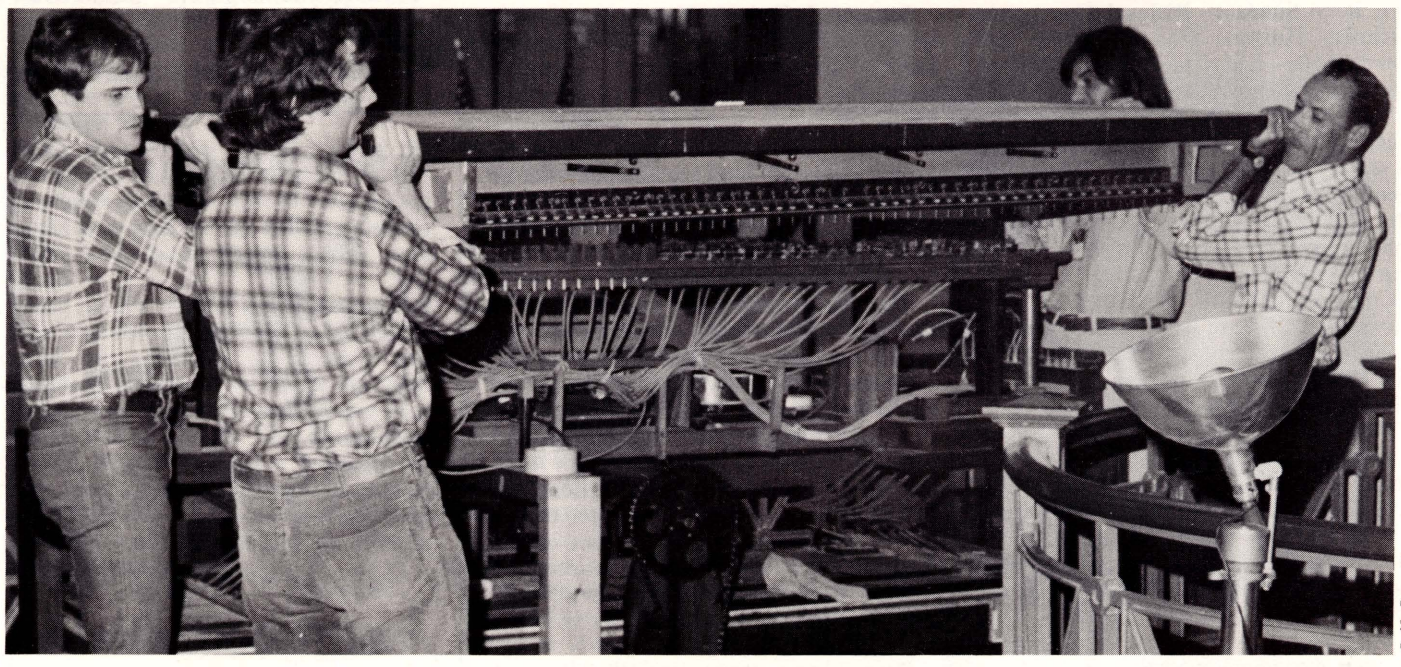
A question facing staffers at the Zoo's new Beaver Valley: How do you clean out the bottom of a pool without removing the animals and draining the water? Curator Daryl J. Boness, coordinator for the Valley, plans to solve this problem with scuba divers.

There is more involved than keeping the pools looking good, Boness said. Sea lions, for instance, will eat pebbles, coins, plastic bags and the like. But the 185-foot-long, 10-foot-deep sea lion pool holds 450,000 gallons of water—too much to drain when silt and debris build up.

The pool's surface draw-off system will collect leaves, and floating food objects can be captured with a net, but the suction created by the circulating water is not strong enough to pull debris from the bottom.

So four Valley staff members—Lisa Burton, Harold Heist, Lisa Stevens and Boness—regularly don scuba gear for diving instructions provided by Joseph D. Libbey, Smithsonian diving consultant in the Office of Protection Services.

SI diving regulations, established in 1973, require all employees who dive in the course of their work to be certified through 42 hours of basic diving instruction. Libbey's course includes 20 hours of lecture and 22 hours of pool and open-water training. Divers are certified by the National Association of Underwater Instructors when they pass written and underwater tests.



Rolfe Baggett

# Orchestrion Belts Out Its Last Tune with '1876' Exhibition

In early April, strains of "Dixie" were heard from the Arts and Industries Building balcony for the last time. The orchestrion, after 3 years in the Centennial exhibition, was packed up and moved out to its new owners in Pasadena, Calif.

The orchestrion, or automatic orchestra as it is sometimes called, was built shortly after the turn of the century in Freiburg, Germany, by the Welte company. After it reached the United States, a player piano was added to it, a common practice at the time. The piano was removed years later, when the orchestrion came to the Smithsonian, so that it would sound like the original Welte.

The instrument was rescued and restored in the early 1960s by Robert L. Johnson, a contractor for "1876," who found it in a building in upstate New York. Much of the building and two similar instruments had already been destroyed, but Johnson salvaged the orchestrion and 133 rolls of music.

The orchestrion's repertoire—about 7½ hours worth—included the "National Anthem," "When Johnny Comes Marching Home," "Carry Me Back to Old Virginny," "Rally Round the Flag," "Blue Danube" and a few Russian folk songs. Many of the songs have been included on a recording produced by the Division of Performing Arts, which is available in the A&I Museum Shop.

The 1-ton automatic orchestra produced what sounded to visitors like a live concert with percussion, brass and woodwind instruments, as well as cymbals and a triangle. When the machine was turned on, an electric motor operated the six bellows which "read" the perforated music rolls and played the music.

The Smithsonian leased Johnson's machine from 1975 until September 1978. Museum of History and Technology curators, who organized the "1876" exhibit, are now actively searching for an orchestrion to replace the Welte.

# SI in the Media

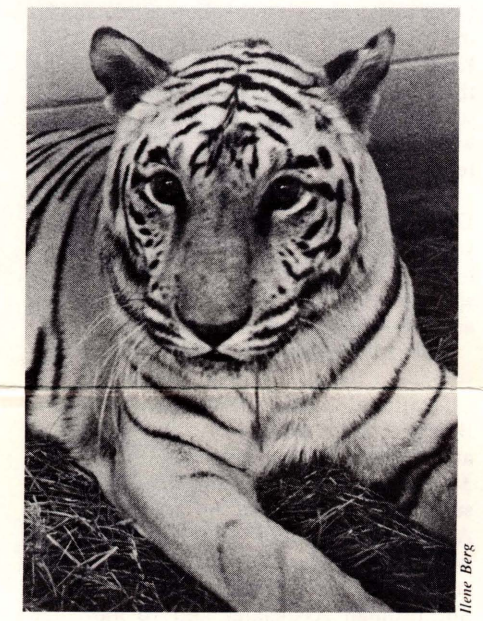
The proposed sale of the Stuart portraits of George and Martha Washington to NPG led to considerable media comment. In addition to the editorials quoted in our page 1 news story, Art Buchwald devoted a column to the matter, Newsweek carried a poem based on Longfellow's "Paul Revere's Ride" and the Washington Post's Paul Richard, in a profile of NPG and its director, wrote that the Gallery "has won high marks for the quality of its publications and exhibits. Once the weakest sister among the Smithsonian's museums, it now appears ready to compete with the giants."

**'Out of Africa'**

Jean White, writing in the Washington Post, was enthusiastic about this major exhibition at ANM. She called it a "sight and sound demonstration" of the observation by the ancient Roman scholar, Pliny the Elder, that "there is always something new out of Africa."

**Science**

MNH scientist Meredith L. Jones is continuing his study of giant worms discovered near the Galapagos Islands on an expedition reported by the New York Times. Scientists from the Massahusetts Institute of Technology and the Woods Hole Oceanographic Institute found these creatures living inside 10-foot tubes of their own making. The worms have no mouth, eyes or gut, and some scientists feel that they form a new basic division of the animal kingdom.



Ilene Berg

**Mohini Rewa**

**Tribute to an Enchantress**

Articles in the Washington Post, Washington Star and the Baltimore Sun reported the death of Mohini Rewa (Enchantress of Rewa), the first white Bengal tiger exhibited outside India.

Mohini, who was 20 years old when she died, arrived in Washington on December 5, 1960; she was received at the White House by President Eisenhower as a gift to American children and became very popular at the National Zoo. Mohini was the offspring of a male named Mohan, the only wild, white Bengal ever captured. She is grandmother of four tigers presently exhibited at the Zoo—two of which are white.

**Einstein Year**

The Smithsonian's observance of the centennial of Einstein's birth was reported in newspapers, magazines, radio and television stations across the country. A Washington Star editorial noted the sense of awe one feels in seeing Einstein's theory of relativity and gravitation in his own handwriting on a chalkboard in MHT's show. Science writers at the Post, Star, the Baltimore News-American, the New York Times and the Baltimore Sun also cited the exhibit in broader articles about Einstein.

**Praiseworthy Arts, Crafts**

Both the Washington Post and the Star loved the David Hockney show at HMSG. The Post's Paul Richard noted, "Not since the all-too-brief heyday of the Beatles has England produced new art so entertaining, accessible, original and humane."

Benjamin Forgey, of the Star, had high praise for the HMSG Calder show's installation by Joseph Shannon, chief of exhibits and design. The Post noted the show's high quality, even though it is only half as big as Calder's retrospective shown at New York's Whitney Museum in 1976.

Richard, of the Post, decided that Seymour Lipton's works in the NCFA show have never looked better. "The drawings and maquette lend this exhibition a mood of soaring freedom, and the splendid installation, designed by Val Lewton, gives it legibility and liveliness," he wrote.

"MA, Space/Time in Japan" at the Cooper-Hewitt was described by Ada Louise Huxtable in the New York Times as "the most fascinating show in New York." Huxtable advised two visits to the show because of its subtlety and complexity.

**People**

Smithsonian staff drawing press attention this month included James Goode, curator of the Castle, in the Washington Star's Home/Life magazine; Paul Garber, NASM, recalling his first kite-flying venture in the Post; Kjell Sandved, whose photograph was carried on the cover of BioScience magazine. Articles by Suzanne Pogell, CBCES, appeared in Boating Almanac 1969 for the Chesapeake Bay Region and Environmental Comment, and CBCES's spring programs were featured on WNAV radio's "Second Cup of Coffee" with Pogell and education specialists Sharon Maves and Ann Coren.

*—Johnnie Douthis*

**Selections from "Return to Albion," the new Portrait Gallery exhibition on American expatriates in England (clockwise from upper right): Lady Cunard, Henry James, T.S. Eliot, and Jennie Churchill with her sons Jack and Winston. Through September 16.**

## *'Portraits'*

*(Continued from Page 1)*

the Smithsonian's firm conviction that the portraits belong in the National Portrait Gallery. That conviction is shared by the Athenaeum, which has been willing to make a very great financial sacrifice in order that the portraits might come to this national museum.

"It is the Smithsonian's understanding that that conviction was also shared by the Boston Museum . . ." Collins noted that the museum's president, "while understandably unhappy about the sale . . . has stated that the proposed arrangement between the Athenaeum and the Smithsonian is in his view reasonable and equitable."

It was agreed in the negotiations that the Smithsonian would acquire the portraits for $5 million in private funds, that the portraits would be returned to Massachusetts for exhibition 1 year out of every five for the next 50 years and that this period could be extended by mutual agreement. The 1-in-5 year stipulation, Collins pointed out, was a Smithsonian response to its awareness of the interest of Massachusetts in the portraits.

*Courtesy of the Boston Athenaeum*

**The Martha Washington portrait. For a look at George, pull out a dollar bill.**

The purchase, it was stressed here, would be consummated only after appropriate legal clearance.

The Boston Museum was kept informed of the progress of the negotiations. Its president, Howard Johnson, was quoted in the Boston Globe as commenting that, if the paintings could not be kept in Boston, he could not imagine a better purchaser than the Smithsonian.

The originl Globe news story was followed within a day by an editorial in that paper which called "the proposed deal . . . akin to, say, selling Faneuil Hall to the state of Arizona as a tourist attraction, paving the Public Garden and tearing down Bulfinch's State House to put up a more efficient high-rise building."

In a lighthearted editorial on April 9, entitled, "Free George and Martha," the Washington Post said, ". . . the Washingtons must be set free. They do in fact belong here; Martha certainly, but George even more so. For one thing, the portraits are unfinished; and what could be more appropriate for this town than the symbol of eternally unfinished work?"

The following day, the Washington Star joined those who favored the sale: "Certainly Boston's loss would be Washington's grand gain . . . We hope, of course, that the portraits come to Washington."

The New York Times had its own ideas: New York is half-way between Boston and D.C., so why not, therefore, display the Stuarts at the Met? The Philadelphia Inquirer thought that the city of brotherly love should have the masterpieces, since they had been painted there.

Columnist William Safire, writing in the New York Times on April 9, revived an old debate among the Founding Fathers in a heavenly playlet involving Washington, Thomas Jefferson and Alexander Hamilton. Hamilton, the Federalist, held that "national treasures belong to the national government," while Jefferson closed the argument by unfurling a bumper sticker bearing this message, "Washington Has Too Much Washington."

That same day, the Post op-ed page featured statements by Sadik and Sen. Edward Kennedy (D.Mass.). Sadik, expressing the view that these "greatest of all American historical portraits . . . justly belong" in NPG, noted that "the Athenaeum portraits were not painted in Boston, but rather . . . in Philadelphia, then the temporary capital of the United States. Washington's greatest moment in Boston, his defense of the city during the American revolution, was fittingly commemorated in a full-length portrait entitled 'Washington at Dorchester Heights,' which Gilbert Stuart painted expressly for the city of Boston."

Kennedy wrote that it would be "a tragedy for the artistic heritage of Massachusetts" if the paintings were to leave Boston and added: "Boston should no more be asked to give up its magnificent Stuart portraits than Philadelphia should be asked to give up the Liberty Bell."

On April 12, Boston's Mayor Kevin White, who called the Stuarts the city's "most prized cultural and historical treasures," and Sen. Kennedy jointly announced a public drive to raise funds to keep the paintings in Boston.

The Athenaeum and the Smithsonian immediately responded with a joint statement: "In view of the proposed campaign to raise the $5 million necessary to purchase the Gilbert Stuart portraits of George and Martha Washington for the citizens of Massachusetts . . . the Boston Athenaeum and the Smithsonian have agreed to suspend any further negotiations until the end of this year."

## *Bach Album Uses Original Instruments*

**By Pilar Markley**

A decade ago, three musicians met in the Smithsonian's Hall of Musical Instruments to record an album of violin sonatas by Johann Sebastian Bach, using original instruments from the Smithsonian's collections. The result: a three-record album, "Six Sonatas for Violin and Harpsichord & Two Sonatas for Violin and Basso Continuo," which won Stereo Review's coveted Record of the Year award in 1970.

On the 10th anniversary of that event, the Division of Performing Arts has released a brand-new pressing of the album as one of three boxed sets of Bach recordings. The other two releases are "Six Partitas for Solo Harpsichord," performed by DPA's James Weaver on the Dulcken harpsichord, and "The Six Brandenburg Concerti," recorded by the musicians of the Aston Magna Festival Orchestra under the artistic direction of Albert Fuller.

The recordings feature a full range of the baroque master's instrumental works—solo instruments, duets and trios and large ensembles. All are performed exclusively on original instruments or faithfully reconstructed copies.

"This is the first time the Brandenburgs have been recorded in the United States on original instruments, which makes it a landmark in American recording history," DPA Director James R. Morris, said.

A direct mail offer to Smithsonian Associates has netted a positive response. By the end of March, 24,000 copies of the Bach sets had been sold.

James Weaver, who directs DPA's Chamber Music Programs, is amazed by the records' success. "We've come a long way," he said. "Playing baroque music on original instruments is becoming the accepted practice. And it's gratifying to know that so many people want to hear the 'old' music with its 'new' sound!"

All recordings on the Smithsonian Collection label are available in the museum shops or may be purchased by mail order from Smithsonian Customer Service, P.O. Box 10230, Des Moines, Iowa 50336.

## Year of the Child Events

The relationship between play and work will be demonstrated during this month's colloquium entitled "Play and Inventiveness/Imaginations at Work," planned by the Office of Smithsonian Symnposia and Seminars and co-sponsored by the National Gallery of Art.

Celebrating both the International Year of the Child and the Einstein Centennial, the May 23-25 program will include separate and joint sessions for adults and children.

## Calendar

The Smithsonian Calendar will appear in the Washington Post on Friday, May 25, and in the Washington Star on Sunday, May 27.

# Newsmakers

By Johnnie Douthis

Under Secretary **Michael Collins** and NASM staffers received the Frank G. Brewer Trophy from the National Aeronautic Association for their contributions to aviation and space education. The trophy, which is the nation's highest award in this area, was given to Collins and the team he assembled while serving as director of NASM.

**Peter DeAnna,** an illustrator at NASM, who recently retired after 25 years at the Smithsonian, last month exhibited realistic paintings, representing 3 decades of his work, at Washington's Studio Gallery. Benjamin Forgey, art critic for the Washington Star, called the grouping "an extraordinary exhibition." DeAnna's most recent painting, a self-portrait, has been purchased by the Hirshhorn.

Judge **A. Leon Higginbotham Jr.,** a Smithsonian regent, delivered the Martin Luther King Lecture at Harvard University. Judge Higginbotham discussed "Martin Luther King's Dream Versus the American Legal Process."

At the annual meeting of the American Association of Physical Anthropologists held in San Francisco, colleagues held a Festschrift in recognition of MNH Physical Anthropologist **Lawrence Angel's** contributions in the field of paleopathology and forensic anthropology. **T. Dale Stewart,** emeritus curator of physical anthropology at MNH, gave a luncheon address citing Angel's accomplishments, and MNH colleagues **Donald Ortner, Douglas Ubelaker, Lucile St. Hoyme** and **David Von Endt** participated in a special symposium in his honor.

**Gwendolyn G. Baker,** administrative officer for the Office of Museum Programs, received a 35-year service pin from **Paul N. Perrot,** assistant secretary for museum programs. Baker has been at the Smithsonian for 19 years.

**Paul Garber,** historian emeritus for NASM, received an honorary Doctor of Engineering degree from the University of Dayton in late April

**Vija L. Karklins,** assistant director of libraries for technical services, was elected by the Federal Library and Information Network membership to serve a 3-year term on the FEDLINK Executive Advisory Committee.

Dale Hrabak

**Richard Hallion, curator of science and technology at NASM, receives the prestigious "Young Engineer/Scientist of the Year" award from Al Keel of the American Institute of Aeronautics and Astronautics.**

**Zora Martin-Felton,** program manager for the Education Department at the Anacostia Neighborhood Museum, spoke on "Exhibits as Educational Resources" at the Phelps-Stokes International Conference on Education.

**Von Del Chamberlain,** chief of NASM's Presentations Division, presented a "family night" lecture at the Franklin Institute in Philadelphia. Entitled "Sky People of Native America," it summarized sky phenomena that would have attracted native people.

**Julian T. Euell,** assistant secretary for public service, presented a 35-year federal service pin to **Jewell B. Dulaney,** administrative assistant for that office. Dulaney has been with the Smithsonian for 31 years.

**Melvin B. Zisfein,** deputy director at NASM, presented incentive awards to the following NASM staffers: **Geneva Battle, Ruth Casey, Garry Cline, Harold Daily, Walter Flint, Richard Horigan, Florine Jones, Mi-Hye Kim, Lillian Kozloski, Allen Lee, William Monroe, Jackie Pace, Robert Padgett, Wilford Powell, Louis Purnell, Herbert Shields, William Stevenson, Delois Vanderhall, Ronald Wagaman** and **Marie Washington.** A 15-year service pin was presented to NASM staffer **Ida Cleckley,** while **Annie Harris** and **Judy Murphy** received 10-year pins for service.

Freer Director **Thomas Lawton** presented a 20-year service pin to **Martin Amt,** special assistant to the director. Amt has spent the entire 20 years at the Freer.

**Louise Daniel Hutchinson,** historian at the Anacostia Neighborhood Museum, participated in a community oral history workshop at West Chester State College, West Chester, Pa., sponsored by the Pennsylvania Historical and Museum Commission. Hutchinson explained how to collect oral history from an urban community.

**Joshua C. Taylor,** director of NCFA, lectured on "Art for the Thoughtful" at St. John's College in Annapolis.

Drawings by **Jody Mussoff,** library technician at HMSG, were included in a group show displayed at the Gallery K during April.

**Lois M. Fink,** curator of research and professional training at NCFA, lectured on "The Art Collection of Harriet Lane Johnston" at the Lancaster County Historical Society in Lancaster, Pa.

**Howard Fox,** assistant curator for exhibitions at HMSG, served on a panel, "Selection and Rejection of Art" at the Baltimore Museum of Art.

HMSG Historian **Judith Zilczer** served as art history judge for the annual David Lloyd Kreeger competition held at George Washington University during April.

**Eleanor E. Fink,** chief of the Office of Visual Resources at NCFA, lectured on a computer program designed for indexing non-print media, at the Catholic University Graduate School Department of Information Science.

**John D. Balling,** research psychologist at CBCES, presented a paper which he coauthored with **John H. Falk,** associate director for education at CBCES, on "The Effect of Setting Novelty and Number of Available Relevant Examples on Field Trip Behavior and Learning" at a meeting of the National Association for Research in Science Teaching, in Atlanta, Ga.

**Robert Meyer,** curator of aeronautics at NASM, gave two aeronautics lectures at the University of Virginia and a talk to the Air Force Academy Parents Club.

**Charlene James,** program manager for the National Associates regional program, made a presentation at the recent annual conference of the Society for Applied Anthropology. James discussed "Instinct or Training? The Application of the Humanistic and Systematic Features of Anthropological Theory to the World of Museums and Public Education."

**Kjell Sandved,** producer of biological motion picture documentation at MNH, appeared on WUHY-FM's program "Fresh Air," while in Philadelphia participating in the National Associates regional activities. He discussed research activities at SI and the animal behavior he has filmed for Smithsonian scientists.

**Bernice J. Reagon,** culture historian in the Division of Performing Arts, delivered a concert-lecture, "Black American Women's Musical Culture," at the Women's Studies Conference at Franklin and Marshall College, Lancaster, Pa.

An essay on Theodore van Karman and the origins of American rocketry, written by **Paul Hanle,** curator in NASM's Science and Technology Department, won the 1978 Goddard Historical Essay Contest sponsored by the National Space Club.

**Judith King,** program assistant in the Office of Education at NZP, was elected to the board of directors of the American Puppetry Association.

**Herbert Collins,** curator in MHT's Division of Political History, was interviewed by KNDI radio in Honolulu about the Smithsonian's political history collections.

an American Institute of Aeronautics and Astronautics Distinguished Lecturer, NASM Deputy Director **Melvin B. Zisfein,** spoke to the New Jersey Chapter of the AIAA in Princeton, N.J.

**David McFadden,** curator of decorative arts at Cooper-Hewitt, delivered a paper, "Patrons and Provenance: The Growth of Silver Collections Since the 18th Century," at the annual meeting of the American Society for 18th-Century Studies, in Atlanta.

## Tourist Time Again

Somehow close to a quarter million visitors traipsed through the Mall museums during the Easter weekend, Friday, April 13, through Sunday, April 15.

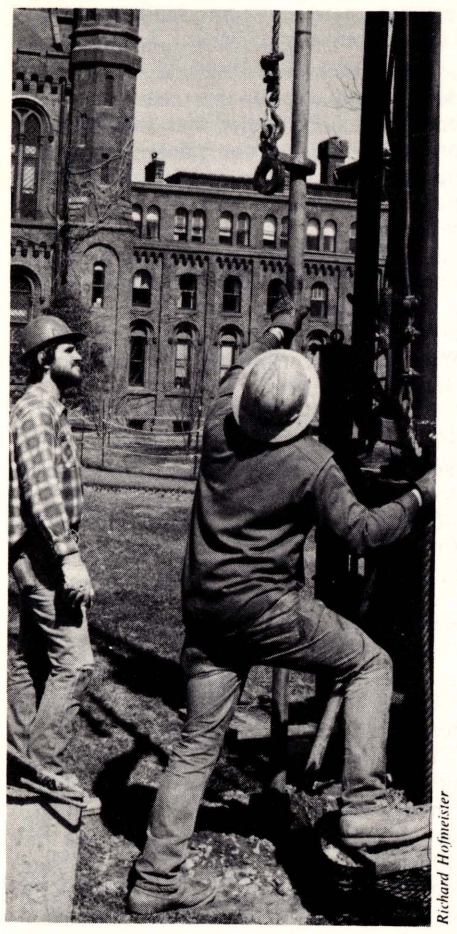
More than 84,000 people visited the National Air and Space Museum on Friday, a figure that came close to breaking the attendance record for the building set July 2, 1978, when some 90,000 visitors were counted.

More people visited the museums this Easter weekend than in 1978, when 63,294 visited the Museum of History and Technology compared to 70,710 this year. The figures at the Hirshhorn Museum went from 17,793 to 23,923. The Museum of National History showed a dramatic increase, from 63,294 last year to 110,212 this holiday weekend. The 3-day weekend total for NASM went from 145,947 in 1978 to 205,339 last month.

## Alabama Sortie

Vince Wilcox, who manages the Museum of Natural History's anthropology collections, and conservationist Jane Norman recently returned from a trip to Birmingham, Ala., where they picked up more than 200 pieces of Jivaro Indian hunting implements and shell, bead and feather work and brought them back to MNH in a rented truck.

The valuable collection, the Museum's first well-documented group of Jivaro study materials, includes headdresses, spears, quivers and poison darts. They were first discovered in the Oriente of Ecuador in 1931, when Matthew Sirling, director of SI's Bureau of Ethnology, made an expedition there with aviator and explorer Donald C. Beatty. Sirling later described the objects in a Bureau of Ethnology publication.



Richard Hofmeister

**BORING SAMPLES . . . Two workers from the Law Engineering Testing Co. complete soil borings 80 feet down into the Victorian Garden. The data will tell engineers and architects about soil conditions, the location of the water table, how much a building on the site might settle and other information necessary in planning the proposed pair of buildings on the South Quadrangle designed to house the Museum of African Art, Oriental art and rare book collections.**

# Student Artists Bow at NCFA

Looking at the prints submitted by high school students to the exhibition, "High School Graphics VI," could give you a new perspective on today's teenagers. There are 162 woodcuts, lithographs, etchings, silkscreens and linoleum cuts which focus on everything from disco dancing to an adolescent's search for identity.

Seventeen-year-old Beth McCuen of the National Cathedral School in Washington is one of the young artists whose work will be displayed. "I've been into printmaking for the past 2 years, and I did this monotype in art class after looking at Cezanne's work," McCuen said, so she named the work, "Cezanne Study." It was made by spreading oil paints thinned with turpentine over a zinc plate and picking up the design directly onto rag paper.

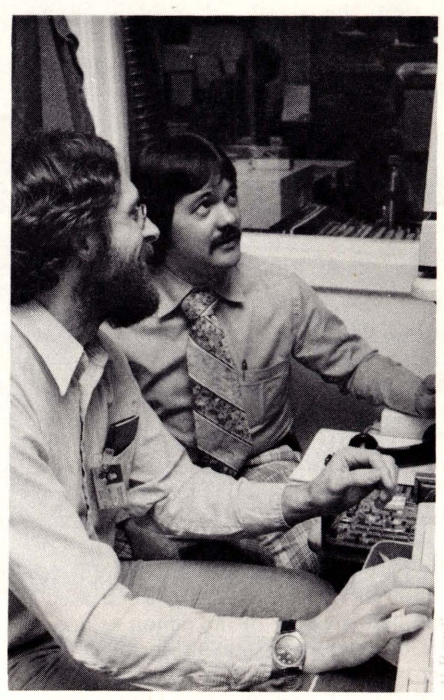
Prints for this biennial event were chosen from 270 entries sent to the National Collection of Fine Arts Education Department and selected by three judges: Deborah Ellis, a Washington printmaker, Chris Middendorf of Middendorf/Lane Gallery and Peter Thomas, dean of the Corcoran School of Art.

The high school graphics show is the sixth since 1969, when it was started to encourage the teaching of printmaking in local high schools.

Some of the students who entered prints are graduates of NCFA's Discover Graphics project, a workshop conducted by the museum's artist-in-residence, Allan Kaneshiro, and other professionals. During the school year, students may spend 4 full school days with their teacher at an NCFA workshop learning etching and lithograph techniques.

Teachers may also be graduates of the Discover Graphics program. For the past 4 years, secondary school art teachers have been invited to be teachers-in-residence in special workshops on the history of prints and printmaking in the classroom.

The 1979 exhibition, organized by Associate Curator Teresa Grana of the Educational Department, honors Franz Bader, director of the Franz Bader Gallery, and Prentiss Taylor, local printmaker. The 34 participating public and private schools submitted best works by their students. Awards for the high school artists whose works were chosen for the exhibition were supplied by the Women's Committee of the Smithsonian Associates and 10 local galleries. "High School Graphics VI" will continue through June 10.



**NOT A MOMENT LOST . . . Contact between the Conservation Analytical Laboratory's library data-terminal and the British Museum's research laboratory computer was made by John Fuller, CAL information specialist, left, and Dennis Rosel, Codex representative. The connection, made over commercial telephone circuits, failed earlier because of transmission standards differences between the United States and Great Britain. The barrier was bridged with the installation of modern Codex computer equipment. It is now possible to quickly search the British Museum's bibliographical listing before it is published twice each year as Art and Archaeological Technical Abstracts.**

## Comings and Goings

**Harold J. Egoscue,** mammologist at NZP, has retired after 7 years at the Zoo. He helped to formulate plans, including selection of species and transfer of animals for the establishment of the Zoo's Conservation Center in Front Royal, Va. Recently, Egoscue was concerned with the construction management plans for such areas as the Lion-Tiger Exhibit, the Great Ape House and the North American Mammal Exhibit and renovations for the Small Mammal Exhibit and the Beaver Valley Exhibit. Egoscue has returned to his native town, Grantsville, Utah, where he will continue the small mammal studies he had interrupted when he came to NZP.

**Susan Foster,** Office of Public Affairs staffer, known to Torch readers for her sports coverage and photographs, has been selected as a participant in the 1979 Minority Journalism Summer Program at

Charles Phillips

**Susan Foster**

the University of California at Berkeley, sponsored by the Institute for Journalism Education in Washington, D.C.

**George R. Packard,** deputy director of the Woodrow Wilson International Center for Scholars since 1976, has been named dean of the Johns Hopkins University School of Advanced International Studies, effective July 1.

**Janice Driesbach** is the new exhibits coordinator with SITES. Before coming to the Smithsonian, she was assistant curator at the Indiana University Art Museum. Other new staff members at SITES are secretaries **Allison Bradford** and **Elizabeth Driscoll.**

**Lois Decker O'Neill,** associate editor for books for the Wilson Quarterly, has resigned that position to continue research for a book on Maud Gonne MacBride, an Irish revolutionary who inspired some of the poetry of W.B. Yeats. O'Neill, at work on the project for 25 years now, will spend the next 2 years researching in Ireland and England. O'Neill came to the Quarterly in 1975 as a consultant to develop the magazine's book section.

**Sandra Westin** has been appointed public information officer for NPG. She was formerly director of public relations for Bloomingdale's, Washington.

**Lynda Claassen** has assumed the position of editor for a publication tentatively entitled "Finder's Guide to Prints, Drawings and Rare Books in the Smithsonian Institution." Claassen comes to the Smithsonian from Mills College in Oakland where she was in charge of rare books and special collections in the college library.

**James A. Wilson** and **Garrick E. Smith** have joined the Safety Division of the Office of Protection Services as chief of the Fire Protection Branch and safety specialist, respectively. Wilson, a fire protection engineer, previously worked for the Department of Energy on the West Coast. Smith was formerly with the National Institutes of Health.

### C-H Auction

More than 500 New Yorkers will be attending the Cooper-Hewitt's sixth annual benefit dance and auction to be held at the Carnegie mansion on Wednesday, May 16. Past auctions have supported a variety of Museum exhibitions and education programs which are entirely dependent on private support.

Susan Foster

**Frances Winfield hopes for a lucky strike near the Jefferson Memorial.**

## Sports

**By Susan Foster**

**Fishing:** Some people get spring fever around now, but not Frances Winfield of the SI labor force. Her "fishing fever" lasts all year long.

The symptoms are easy to detect—and very infectious. Winfield, like most fishing buffs, has been known to entice friends with her enthusiasm for the sport. Winfield, who has been pursuing this hobby since she was 9 years old, said she has tried most types—deep sea and warm and salt water fishing.

"When I was a little girl," Winfield said, "I used a pole made from bamboo and fished in the creek. I remember faking a stomach ache one Sunday to get out of going to church. As soon as my parents got around the corner, my girlfriend and I were gone—with our fishing poles."

Winfield came to Washington from her Georgia home and soon learned enough about area waters to "bring home a good catch." On one rainy outing, Winfield caught nearly 100 flounder before giving in to the cold and damp.

The season has been slow though, according to Winfield, who said, "the weather hasn't been very cooperative." Still, she hasn't lost hope—the season is still young.

**Basketball:** Disappointed fans of the SI basketball team will have to wait until next year for glory. The team was eliminated by the Agriculture Department team, 36-34, in the first round of this year's city-wide Department of Recreation tournament.

The game was tied, with 6 seconds remaining, when Agriculture scored with two free throws. The SI team held an 8-point lead at one time. Still, as divisional champions, the team will be awarded trophies.

**Bowling:** No dramatic changes occurred in the last month for the SI bowling league, and unless one team hits a hot streak, the outcome may be a first-place trophy for the Juicy Five. Their record is 73½ wins and 34½ losses.

The only switch from last month's standings came when the Libraries' No Names dropped to fourth place from third. The high game of 204 by Libraries' Inez Buchanan was beaten by Faye Norman's 219. However, according to James Lawson, league secretary, the score represents the game bowled—plus a pre-set handicap. Buchanan normally bowls such a high game that her handicap is low, making it easier for her to lose handicap categories.

**Recreation:** Ann Gilstrap, SI Recreation Association, reports a number of discounts and summer activities for employees. Chartered trips are planned for July to Disney World and to the Canadian Rockies. In November, the Association is offering a package tour to Bermuda.

Local excursions include discount cards for Busch Gardens and Kings Dominion, plus a variety of savings on concerts, recitals, arts and crafts and dinner-and-dance.

For more information, contact Ann Gilstrap, ext. 6667, or stop by the Recreation Office, Room 3109, Arts and Industries Building, Monday, Wednesday or Friday between 11:45 and 1:15.

**Jogging:** Mike Bradley, SSIE, had to bow out of the Cherry Blossom Classic last month but is racing himself back in shape for the Constellation/Fort McHenry 10,000-meter race late in May.

## *Hockney Drawings at Hirshhorn*

**By Sidney Lawrence**

A wanderer, the noted British artist David Hockney, settled down briefly at the Hirshhorn late in March to show Joan Mondale, accompanied by Museum Director Abram Lerner, his drawing of a hotel balcony in Marrakesh and other prints and drawings now on exhibit at the Museum.

Hockney, 41, who was born in Bradford, Yorkshire, and attended art school there and in London, experimented with abstraction at first but eventually chose the more literal imagery of figurative art. "I had found that anything could become a subject," he explained, "a poem, something you could see, an idea you suddenly have, something you feel—anything was material you could use."

Not until he was 18 did Hockney first visit London, only 200 miles from his hometown. But in his early 20s he was bitten by the travel bug, and in 1961 left England to visit New York. Two years later he was in Egypt doing drawings and illustrations. But the city that had intrigued him longest was Los Angeles, which he finally visited in 1963.

The city's swimming pools, palm trees and sunshine fascinated Hockney. Over the years, he became widely known as an interpreter of the California scene, eventually setting up a studio there in addition to those he kept in London and in Paris. His West Coast images were considered incisive enough, in fact, to be chosen to illustrate the opening titles of the recent movie, "California Suite."

**'Celia,' 1972**

Although he has been painting in California for the past 6 months, Hockney doesn't like to settle in one place for long. His life has always been punctuated by travels to such far-flung places as Japan, Burma and Indonesia—a quietly adventurous existence that is reflected in the 150 crayon sketches, line drawings, etchings and color lithographs in HMSG's exhibition, appropriately titled "David Hockney: Travels with Pen, Pencil and Ink." It continues through June 10.

## Two 'Foxy Grandpas'

One way to bring museum collections to life is to introduce the people who actually used or created the objects.

Toward that end, the Smithsonian has completed a pilot film for a projected series called "Reunions—Memories of an American Experience," or, more informally, the "Foxy Grandpas." It is a record of personal experience, of visits with people who have intimate knowledge of objects on display. These mostly older Americans were chosen because of their vitality, their on-screen presence and their contributions to the mainstream of everyday life.

The pilot film, a production of the Office of Telecommunications and the Office of Exhibits Central Motion Picture Unit, focuses on a well-known aviator and a not-so-well-known pharmaceutical manufacturer. General James H. ("Jimmy") Doolittle won many trophies and medals in his long career, but when he returned to the National Air and Space Museum in 1978 to talk with Curator Donald Lopez in front of his old Curtiss flyer, he dwelt on his days as a racing pilot and his contributions to aviation.

Filming Doolittle was nearly as exciting as his famous flights. Perched high in the air on a platform near his old airplane, now hanging from the NASM rafters, Doolittle and Lopez carried on their conversation in front of the precariously mounted floodlights. Cameramen were hoisted equally high on small platforms which permitted little movement. Down below, members of the crew kept a nervous eye on the rigging, ready to spring at the slightest sign of mechanical instability.

The location filming of Boercke & Tafel was more mundane—inside a laboratory. Boercke & Tafel is the nation's largest manufacturer and exporter of homeopathic medicines. The company's first display, which was shown at the 1876 Centennial celebration in Philadelphia, is intact and can be seen in the Arts and Industries Building.

Gustav Tafel, present owner of Boercke and Tafel, began his apprenticeship in the firm during his teens and, after obtaining a degree in pharmacology, gradually took on more responsible positions. Touring the processing labs for "Reunions," he described the curious blend of traditional and modern materials and methods.

The pilot film, narrated by Burgess Meredith, devotes 14 minutes to each subject and is packaged for television. A more comprehensive half-hour version of the homeopathic segment, intended for professional audiences, has also been made for the Smithsonian's Division of Medical Sciences. Ramunas Kondratas and Michael Harris of that division were consulting specialists for both versions. Consultants for the Doolittle portion were Donald Lopez, Walter Boyne and Jay Spenser of NASM. The film was directed by Karen Loveland of OEC Motion Picture Unit and Benjamin Lawless of MHT. Director of photography was John Hiller. Nazaret Cherkezian of OTC was executive producer.

### Yummy!

The Boiler Room snack bar in the Castle basement took on a new look in early April with the addition of a counter offering sandwiches and other items not available from the vending machines.

The snack bar has been redone by the Marriott Corporation along the lines of the Hirshhorn snack bar, James F. Pinkney, assistant business manager, said, and now offers made-to-order sandwiches, pies and pastries, fresh fruit and Chef Fernand Koulon's soup du jour from the Commons. All the vending machines remain in operation except for one sandwich machine.

The counter is open 5 days a week from 11 a.m. until 1:30 p.m. Choices range from a cheese sandwich for 50 cents and egg, chicken or tuna salad sandwiches for 65 cents to a ham sub at $1.10 and a chicken dinner at $1.60.

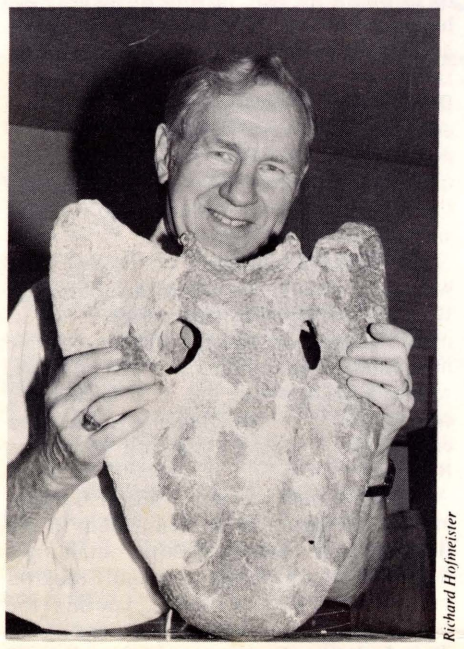
### NASM's New System

The Air and Space Museum has initiated a new way to sell tickets for its continuous film showings. Last month NASM scrapped the old policy of selling tickets only for the next movie, and put tickets on sale at 10 a.m. for all of that day's 16 shows and for the following morning's first show at 10:15. That way, a visitor can buy a ticket in the morning for an early afternoon show and have several hours to tour the museums.

# Q & A

**John E. Ott, a preparator in the Museum of Natural History's Department of Paleobiology Vertebrate Preparation Laboratory, is retiring this month after 24 years at MNH. He and the staffers who work with him at the laboratory are responsible for readying vertebrate fossil specimens for scientific study and exhibit—sometimes restoring and reassembling whole skeletons. Ott was interviewed by MNH Information Officer Thomas Harney.**

Q. *How did you get into this line of work?*
A. When I left the service at the end of World War II, I worked at a dental laboratory making metal plates. I also had a job for awhile as a mortician. My specialty was restoring badly disfigured bodies. A lot of modeling and sculpting was involved—something I've always had a good eye for. I got this job because my wife noticed an advertisement in the paper. "John," she said, "the Smithsonian needs someone to restore bones. That's right up your alley."



Richard Hofmeister

**John Ott and eryops skull.**

Q. *What was your biggest restoration job?*
A. It was the first assignment I was given when I came to work here. Dr. Lewis Gazin had excavated the bones of a giant ground sloth in Panama and they wanted it exhibited. I got the job of restoring it. Frank Pierce was my supervisor and for starters he handed me one of the feet. It was 39 inches from heel to claw, as big a foot as anyone will ever see.
Q. *It turned out to be a harder job than you expected?*
A. The bone was so porous and fragile that you could take it in your hand and crush it. We had to soak it in plastic resin to strengthen it. Another problem was that the bones had warped. It was an almost impossible task to straighten them out—but we did it. Thousands of broken fragments had to be pieced together. What was missing had to be modeled.
Q. *How did you fit the skeleton together?*
A. It was too big and heavy to support its own weight. We drilled through the bones and supported them with steel rods.
Q. *How long did all this take?*
A. About 4 years. I was working on other restoration projects at the same time. The sloth is on exhibit now in the Ice Age Hall. Recently, we discovered that one of its clavicles is on backwards. No one had ever noticed it. I'm sorry that I won't be around to fix it.
Q. *Didn't you restore the blue whale skull that is suspended from the ceiling of the new evolution hall?*
A. Yes, but it wasn't that difficult. It's a modern piece of bone, not a fossil, and has considerable strength. We provided support points for the suspension cable by running a steel pipe through the skull.
Q. *The fossils you restore are often brought back by field expeditions. Have you gone along on any of these?*
A. Many times. I think the most exciting one was in 1958 when I accompanied Dr. Vaughan out West. One of our first stops was in Delta, Colo., where a lady prospecting for uranium had discovered remains of a Brachiosaurus, the biggest of all the dinosaurs. When we got to the site, there were dinosaur bones lying all over the place. It looked like a dinosaur graveyard. We shipped back the big Brachiosaurus arm bone that's on exhibit in the dinosaur hall. It's about 6 feet long.
Q. *A lot of material you work on comes in from the field embedded in rock. What's required to get it free?*
A. The main thing is patience. There's no one tool. We use all types: grinders, acids, pneumatic hammers, even sand blasters. Some specimens are tiny. When I get a shrew jaw, I have to put it under a microscope and work on it with a pin. If I slip, or strike a soft piece of bone, everything is ruined.
Q. *You must have a feeling of great satisfaction when you finish a specimen.*
A. I do. Especially if it's an exhibit piece people will see and enjoy. I'm working now on a Permian reptile skull that's going to be displayed in the new dinosaur hall. That piece is going to be my last hurrah! There comes a time when you've got to hang up your apron and let someone else take over.

## Volunteer

Have any spare time? The federal government recognizes volunteer experience on job applications. If you'd like to do volunteer work, voluntary action centers in Washington (333-0455), Maryland (279-1666) and Virginia (691-3460) will help you select a volunteer job suited to your interests and skills.

Richard Hofmeister

**Donn (left) and Peter work the 18th-century Common Press in MHT's Hall of Printing.**

# Printers' Ink Rubs Off on Kids

**By Abbie Gardner**

They say that once printers' ink gets under your fingernails, you have little choice as to which path your life will follow. If that's the case, Donn Hoffman, 13, and Peter Doll, 16, have narrowed their options at an early age.

Both boys spend most of their spare time as volunteers at the Museum of History and Technology, where they offer printing demonstrations to visitors, using such machines as the 150-year-old Common Press.

In the demonstration Donn and Peter act as beaters, spreading ink on the type with two sheepskin-covered leather ink balls and covering the press bed with a lightweight frame called a frisket. It is given a rub for good luck, and then acting also as the pullers, they bring the paper through with a couple of pulls on the screw. The result is a real broadside, similar to those large, one-sided documents used in the early 1800s, when the MHT press was new, to publicize controversy or official proclamations.

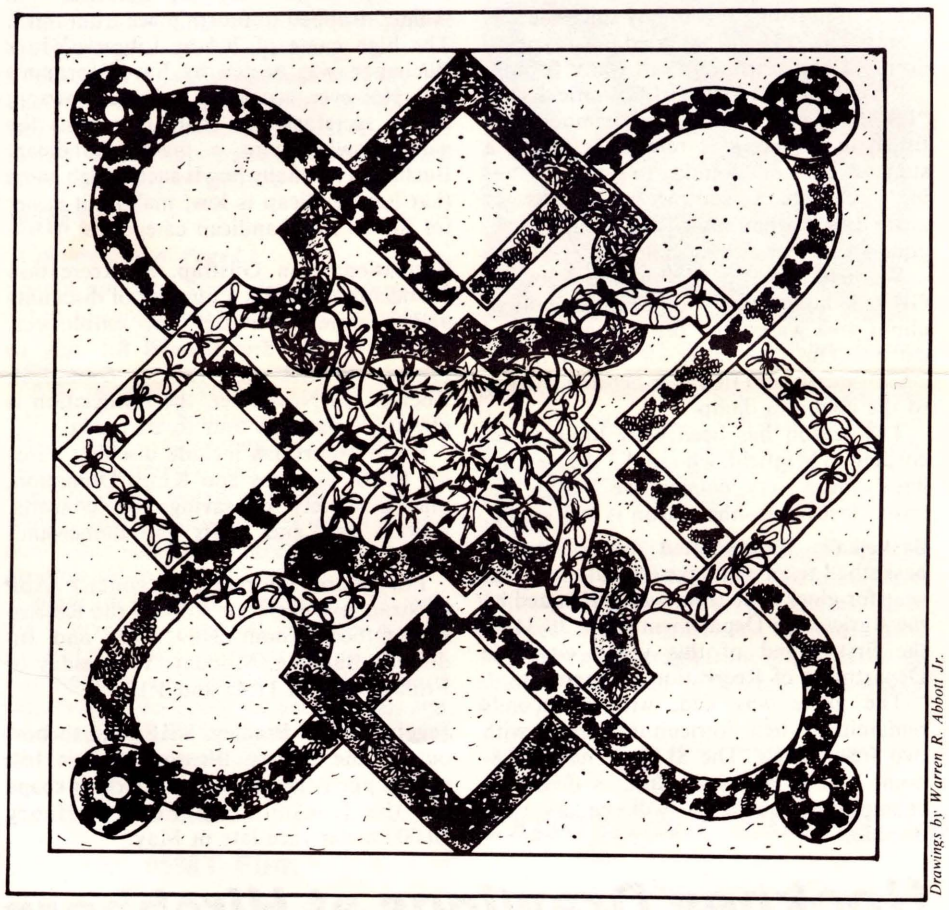
Both boys were early fans of the MHT printing demonstrations. Peter was so intrigued that he bought his own press and virtually taught himself the fundamentals. Donn's interest goes back to a fourth grade project with rubber stamps. The teacher, sensing Donn's enthusiasm, introduced him to a treadle press, which has a foot device to drive the machine.

Donn continued to work with that teacher for 2 years and eventually bought his own press. He has his own small business, printing invitations, stationary and business cards. Now he's experimenting with both lettering and wood and linoleum cutting.

Peter and Donn, who began at the Smithsonian as summer volunteers in 1976 and 1977, respectively, work under the guidance of Dr. Elizabeth Harris and Stan Nelson of the Division of Graphic Arts. Besides giving printing demonstrations, they have helped to restore old presses for exhibition. They have even helped produce items for sale in the McGraw-Hill Bookstore: broadsides from the "Stuffed Goose" collection and Christmas cards.

Donn and Peter don't have regular hours on MHT's third floor, but you can catch a printing demonstration there Monday, Tuesday, Thursday and Friday between 2 and 4 p.m.

*Abbie Gardner was an intern in the Office of Public Affairs earlier this year.*



Drawings by Warren R. Abbott Jr.

*The traditional knot garden is an attractive arrangement for growing herbs.*

# Flora Smithiantha

**By James Buckler**

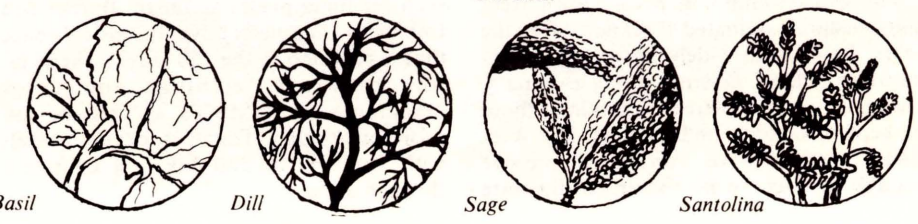
A renewed interest in herbs has kept pace with the public's burgeoning appetite for natural foods and seasonings.

The most popular kitchen herbs, sweet basil, chives, marjoram, parsley, rosemary, sage and thyme, are easy to grow in the garden, on window sills or under fluorescent lights. For best growth, all herbs require full sun. Their leaves should be harvested before the plant flowers to gain maximum flavor.

Plant in well-drained soil in the garden or in one part each of peat, sand and sterilized soil if grown indoors. Allow at least 8 weeks from seeding to obtain a plant large enough for transplanting outdoors. Contrary to popular belief, most herbs thrive with a biweekly application of a complete fertilizer. Sweet herbs, such as basil and marjoram, should have lime added to the soil for best growth and sweeter taste.

Plants grown under lights or on a window sill will need constant pinching back to encourage growth. These shoots can be used in cooking, or, if you have too many at once, the leaves can be dried on a wire rack for about a week and then stored in an airtight container.

The Office of Horticulture will feature a collection of herbs at the east door of the Castle during the month of May, and individual plants of English thyme, basil, lavendar, rosemary, peppermint, dill, curled mint and sage will be offered for sale during May at the museum shops for $1.50 each. In addition, rue and yarrow will be featured in perennial beds next to the Ninth Street underpass and in the Victorian Garden.



*Basil* *Dill* *Sage* *Santolina*

## Franklin R. Bruns Jr.

Franklin R. Bruns Jr., 66, who headed the Museum of History and Technology's Division of Philately and Postal History from 1951 to 1957, died of cancer on March 24. An eminent philatelist, Bruns returned in 1972 to the Postal History Division where he negotiated the donation to MHT of a number of significant and valuable philatelic collections. Bruns, recipient of numerous honors and awards, wrote a syndicated newspaper column and was the author of many other publications on stamps.