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Smithsonian  
Institution

SCIENCE, HISTORY AND THE ARTS  
NUMBER 1 • SUMMER 2003



**Birth of a museum.** No proud parent ever snapped as many photos of a new baby as can be found on the National Air and Space Museum's Web site about its new Steven F. Udvar-Hazy Center. This facility for the restoration and display of the Smithsonian's historic collection of aviation and space artifacts is slated to open Dec. 15 at Washington Dulles International Airport.

From its groundbreaking in October 2000 to the hanging of the first aircraft for display, a team of photographers has captured each stage of building this spectacular structure and posted it in color for all to see.



Want to see how the concrete thrust blocks that anchor the aviation hangar to the ground were built? It's here. How about the topping out of the Engen memorial tower with its cab of steel beams? Ditto. Ever wonder how specialists move historic aircraft in a semi-trailer? Want to see how the center's large-format theater was put together? Click away.

With all the maps, videos and other information on this site, there's almost enough information here to begin building your own museum. There's even a clock counting down the days, hours, minutes and seconds until this museum opens. —[www.nasm.si.edu/nasm/ext/hazycenter.htm](http://www.nasm.si.edu/nasm/ext/hazycenter.htm)

Dear Readers,

Welcome to the first issue of Inside Smithsonian Research. I am delighted to send you this new publication that highlights the remarkable range of research in art, history and science being done here at the Smithsonian.

Inside Smithsonian Research is a quarterly publication that replaces Research Reports. In addition to lively feature articles, each issue will give you the inside story on current research-related news from around the Institution and also will offer a look at the latest in Smithsonian books and recordings.

With this inaugural issue, two new columns are being introduced as well. "Smithsonian Online," on Page 2, offers details and addresses of compelling Smithsonian sites on the World Wide Web. "New to the Collections," on Page 16, highlights an object the Smithsonian has recently acquired.

I welcome your comments on our new look and content. Please contact me by electronic mail or regular mail at the addresses provided on this page.

I hope you enjoy your journey inside Smithsonian research.

John Barrat  
Editor

# Inside

## Smithsonian Research

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*On the cover: In 1803, an aeronaut named Etienne Robertson conducted scientific experiments in a balloon that lifted off from Hamburg, Germany, and remained aloft for five hours. This 19th-century French vase, which will be on view in the National Air and Space Museum exhibition "Balloonmania," honors his achievement. (Photo by Eric Long)*



Smithsonian  
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# First balloon flights swept Europe and America up in balloomania!

By Michael Lipske  
Special to Inside Smithsonian Research

**W**hen the first American astronauts rocketed into space in the early 1960s, they instantly became household names. Magazines and television imprinted their faces and spacecraft upon the mind's eye of an adoring nation. Most Americans would have had little trouble identifying Alan Shepard or his Mercury capsule and the spacemen and spaceships that followed.

Nearly 200 years earlier, when equally daring aeronauts took to the sky in gas-filled balloons, their faces and their craft also were publicized, but on household items, such as porcelain teacups, snuffbox lids and embroidered chair seats.

"In their time, these folks were like astronauts," says Tom Crouch, senior curator of aeronautics at the Smithsonian's National Air and Space Museum, of the first balloonists. "And in the days before *People* magazine, this is the way people knew what the aeronauts and their balloons looked like."

Ballooning's impact upon the public imagination—particularly, how early flights were celebrated in European and American decorative arts—is the focus of "Balloomania," an exhibition scheduled to open in December with the opening of the Air and Space Museum's new Steven F. Udvar-Hazy Center at Washington Dulles International Airport. The show will feature select items chosen after careful research from the

museum's rich collection of ballooning memorabilia.

## Much commotion

"Balloomania" viewers will experience the excitement and thrill that these first balloon ascensions injected into the popular consciousness of the time. The first balloon flight—sent aloft from the town square of Annonay, France, in June 1783, when brothers Joseph and Etienne Montgolfier filled a paper-and-fabric bag with hot air—generated as much commotion as the first airplane flight elicited more than a century later.

That first balloon ascent had no passengers. A few months later, the Montgolfier brothers launched a second balloon carrying a sheep, a duck and a rooster. Manned flight followed quickly. In November 1783, two noblemen from the court of Louis XVI rode a Montgolfier balloon more than five miles from Paris to a rural vineyard, landing amid startled farmers.

Within a decade, balloonists had crossed the English Channel, U.S. President George Washington had witnessed the first aerial voyage in America and balloons were being used for battlefield reconnaissance. Ballooning was the rage, and the populace was eager for scenes of aeronautical achievement.

*(continued)*



**This French 18th-century walnut chair depicts Jacques Alexander Charles and M. Noel Roberts lifting off from the Tuileries Garden in Paris on the first hydrogen balloon flight, Dec. 1, 1783. (Photo by Eric Long)**



## *Ballooning was the rage, and the populace was eager for scenes of aeronautical achievement.*

### Images galore

Ceramic tiles and vases, medallions, a mirror, a clock and scores of other 18th- and 19th-century objects were manufactured to commemorate these historic ascensions. “We have many porcelain teacups and saucers that show famous balloon flights,” says Suzanne Lewis, curatorial assistant in the Aeronautics Division’s art collection, who worked with Crouch to choose and prepare artifacts from the National Air and Space Museum collections for “Balloonmania.”

“What makes these things so neat is that they showed people what balloons and ballooning looked like,” Crouch says.

“Communications worked differently in the 18th century. Visuals were much harder to reproduce,” he adds, and periodicals of the day seldom printed images.

But “Balloonmania” will have images galore: ceramic saucers from the 1780s with painted illustrations depicting the apparatus for generating hydrogen gas to fill balloons; a tortoiseshell box sports images of the sheep, duck and rooster

launched by the Montgolfiers; ashtrays; pocket watches; paperweights; a tooled leather scent-bottle case; and boxes of ivory and of amber—all beautifully decorated with ballooning scenes.

“Balloonmania” also will include jetons, coins struck to commemorate balloon-related events. Among them is a depiction of the dramatic escape from Paris of French statesman Leon Gambetta during the 1870 siege of the city in the Franco-Prussian War.

### Lady in the Clouds

One of the few artifacts in the exhibition that was actually used in ballooning is a barometer carried by American physician John Jeffries on the first balloon crossing of the English Channel, in January 1785. “It’s a venerable object,” National Air and Space Museum Conservator Ed McManus says.

“Balloonmania” also will display several 18th-century walnut chairs from France, their seats embroidered with representations of ballooning firsts. One chair marks the July 1785 deaths of Pilatre de Rozier and Jules Romaine—ballooning’s first fatalities.

One of the museum’s prized ballooning possessions will not be seen at the Udvar-Hazy Center right away. It’s a wooden panel from an interior wall of an old barn from upstate New York. Pasted on the panel are posters advertising balloon ascensions of the 1860s and 1870s. Along with a “Base Ball Match” and horse trotting, the posters promise such delights as “A Lady in the Clouds . . . Miss Nellie Thurston,” who is described as the “Pioneer Lady Aeronaut of America.”

Discovered in 1990, the posters are among “the earliest surviving examples of ballooning history in America,” McManus



Tom Crouch stands next to a barn wall covered with posters from the 1860s and 1870s advertising balloon ascensions. (Photo by Eric Long)



points out. Unfortunately, the posters are also torn, insect-damaged, stained and firmly stuck to the rough-hewn panel with animal-hide glue. Too fragile for exhibition, reproductions of the posters may be exhibited eventually.

#### Until Sputnik

Items on view in “Balloonmania” are but a tiny portion of the National Air and Space Museum’s balloon

holdings, a collection Crouch calls “one of the world’s best.” Other holdings include many balloon baskets and envelopes—as the overhead, inflated part of a balloon is properly called—as well as famous gondolas such as Double Eagle II, used in the first balloon crossing of the Atlantic in 1978, and the Bud Light Spirit of Freedom, used in the first solo circumnavigation of the globe in 2002.

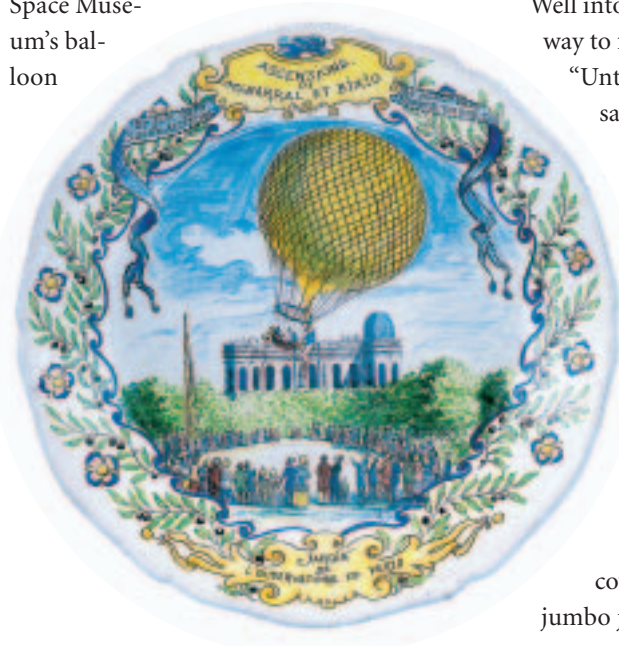
Well into the 20th century, the oldest way to fly remained one of the best.

“Until Sputnik—the first artificial satellite, launched by the Soviet Union on Oct. 4, 1957—balloons flew higher than anything else,” Crouch says.

“For most of the history of flight, balloons were capable of doing things airplanes could not.”

And as “Balloonmania” suggests, balloons have yet to be surpassed in their style and romance. After all, can you imagine decorating the cover of your snuffbox with a jumbo jet? ❖

*As “Balloonmania” suggests, balloons have yet to be surpassed in their style and romance.*



**Above:** This whimsical 19th-century French fan depicts the fanfare and excitement that surrounded Europe’s first balloon flights. (Photo by Eric Long)

**Left:** The ascension of aeronauts Barral and Bixio from the observatory garden in Paris on June 29, 1850, to study the atmosphere and solar rays, was deemed a fitting subject to decorate this 19th-century French plate. (Photo by Eric Long)



# Fruit, biscuits and kind words coax cooperation from Zoo's new pandas

By Michael Lipske

Special to Inside Smithsonian Research

A giant panda's life isn't all chewing bamboo and taking naps, at least not at the Smithsonian's National Zoological Park in Washington, D.C. As members of one of the rarest, most endangered species on Earth, captive pandas are the focus of intense research and subject to constant veterinary observation.

Fortunately, Mei Xiang and Tian Tian, the Zoo's female and male giant pandas,

are a zoo doctor's dream. When it is time to record their blood pressure, take their temperature or even examine a sore knee, the bears scarcely object. In fact, they spend the entire doctor visit calmly munching fresh fruits and vegetables.

Using positive reinforcement in which behavior is shaped by doling out food rewards, the Zoo's keepers have trained the bears to cooperate during checkups. For example, the pandas have learned to poke

an arm through a hole in their cage and let a veterinarian strap on a blood-pressure cuff or even draw blood.

Training an animal to participate in its own physical exam has several advantages. For one, it means not having to anesthetize the animal for routine procedures. This also means getting a more accurate medical profile.

"Anesthesia alters values" such as blood pressure and blood chemistry, as well as heart rate, Zoo Curator Lisa Stevens explains. By using positive reinforcement, "we're getting real values."

## Busy and happy

One recent morning, Stevens and other Zoo staff gathered at the Panda House for a training-and-data-collection session. Keeper Laurie Perry had filled two plastic bowls with chopped-up apples, pears and carrots and red "leaf-eater" biscuits. With little prompting, 4-year-old Mei Xiang came through a side door from her indoor night room and entered an adjacent "squeeze" cage used for the sessions.

**Left: National Zoological Park Animal Keeper Laurie Perry practices getting Tian Tian to mimic her body movements. Zoo staff eventually hope to be able to perform ultrasound examinations on the pandas. (Photo by Jessie Cohen)**

**Opposite: Female panda Mei Xiang takes a stroll around her enclosure. (Photo by Jessie Cohen)**



Separated by the bars at the front of the cage, Mei Xiang and Perry sat down on the pavement facing each other. While Perry hand-fed the panda treats from one of the bowls (“the whole idea here is to keep Mei Xiang busy and happy,” Stevens explains), the curator reached into the cage with a sterile swab to take a vaginal sample from the panda.

Collecting vaginal cells is part of the Zoo’s effort to monitor Mei Xiang’s estrus cycle. “This gives us the ability to correlate changes in her vaginal cytology with behavioral and hormonal data collected during the breeding season,” Stevens says.

When Stevens stepped aside to prepare a microscope slide from the swab, veterinarian and Zoo Director Lucy Spelman began wrapping a large blood-pressure cuff around the panda’s arm, which the obliging bear had extended through the side of the cage. With the cuff in place, Veterinary Resident Carlos Sanchez connected it to a monitor that recorded the panda’s blood pressure—a healthy 159 over 91.

### Dental exams

Throughout the procedure, Perry kept her own eyes locked on the panda’s. She also kept up a soothing patter: “Good stuff, Mei Xiang.... Good girl, what a good girl.”

From time to time, Perry extended her index finger as a “target” for the panda. Part of the panda training has involved teaching them to touch their noses to their keeper’s finger. Once a panda learns to target the keeper’s finger this way, it becomes easier to guide the animal into a desired position.

The pandas also have learned to mimic their keeper’s body movements. At one point, Perry stretches out on her side, and inside the cage, so does Mei Xiang. By getting a panda to lie down this way, Zoo vets expect to soon be able to perform ultrasound examinations on the animals.

“That was something the trainers at Ocean Park emphasized: getting the panda to pay attention to where your body goes,” Stevens says. Ocean Park is a com-

bination amusement and animal park in Hong Kong, and its trainers created the techniques now being used with the National Zoo pandas. Stevens and Perry visited Hong Kong two years ago to observe panda training at Ocean Park. Last year, Ocean Park Panda Trainer Paul Ng visited Washington, D.C., to launch the National Zoo’s training program.

Stevens thinks the Zoo’s pandas someday will even be taught to hold their mouths open for dental exams and teeth cleaning. Similar training is going on with the National Zoo’s apes and elephants and several other species.

### Laid back

After the Zoo doctors are through with Mei Xiang, she is allowed to wander outside and get back to eating bamboo. Giant pandas spend 10 to 15 hours a day consuming 20 to 40 pounds of bamboo.

Now Tian Tian takes his turn in the examination cage. He seems, if possible, even more relaxed than Mei Xiang about the encounter with Zoo people. While Perry gets the panda to sit and distracts him with food and talk, Stevens reaches through the cage bars with a pair of calipers to measure Tian Tian’s testicles.

Although a panda’s testicles are known to change in size over the course of breeding season, little research has been done on male hormones and associated physical changes, Stevens says.

As part of the Zoo’s work on panda reproduction, the animals’ urine and feces are also collected daily and analyzed for changes in hormone levels.

When Tian Tian’s blood pressure is being read, he gobbles the treats offered by Perry—all except carrots. Tian Tian doesn’t like carrots. Occasionally, the bear burps. “Oh, what a piggy,” coos Perry, offering a biscuit. “Good boy. You’re so good.”

“You could train any animal to do this,” Stevens says, watching Tian Tian respond to Perry’s directional cues during the exam. “But it helps that pandas are pretty laid back.” ♦



*Perry kept her own eyes locked on the panda’s. She also kept up a soothing patter: “Good stuff, Mei Xiang.... Good girl, what a good girl.”*

# Whistler's 'Arrangements' launched a whole new way of seeing art

By Hope Cristol

Special to Inside Smithsonian Research



Whistler's mother raised a radical son. A masterful artist, he shook up the art world by taking over the very rooms in which his art was displayed.

In 19th-century Europe, when art galleries were cluttering their walls with dozens of paintings by myriad artists, American expatriate painter James McNeill Whistler helped invent the one-man show. He hung his works sparsely and dictated down to the smallest ambient detail how they were to be presented.

Not only did Whistler color-coordinate the walls, furniture, lighting and frames of his paintings, he also dressed gallery guards to match. One art critic dubbed the yellow-and-white uniformed attendant in Whistler's 1883 exhibition the "poached egg man."

Ribbing aside, in Whistler's day, the art-going public of Europe was hungry for change, and they simply wanted to be able to see the art better. Whistler didn't merely stir up this hidebound art world, says Kenneth Myers, associate curator of American art at the Smithsonian's Freer Gallery of Art, "he offered a whole new way of seeing."

Whistler offered a segue from the realism of Gustave Courbet and the visual narratives of his Victorian contemporaries. He championed "art for art's sake," believing that the value of a work depends

solely on its visual appeal—not representational accuracy or storytelling ability.

In November 2003, two of Whistler's most influential one-man shows—in which he first presented his aesthetic philosophy in grand style—will be re-created and displayed side-by-side in a special exhibition at the Freer Gallery of Art.

The exhibition, "Mr. Whistler's Galleries," will revisit Whistler's "Arrangement in White and Yellow," which opened in London in 1883, before traveling to six cities in the United States—the first one-man Whistler show ever seen by his coun-



trymen. "Arrangement in Flesh Colour and Grey" was presented in London the following year. "Mr. Whistler's Galleries" is a collaboration between the Freer and the Virginia Museum of Fine Arts in Richmond.

## The jaundice

Whistler's work as an exhibition designer played a key role in the development of modernist styles of displaying art, says David Park Curry, curator of American arts at the Virginia Museum of Fine Arts, who explored this issue in a 1987 article published by the National Gallery of Art.

Working in conjunction with Curry, Myers researched Whistler's two groundbreaking shows for three years before planning "Mr. Whistler's Galleries." The two scholars pored over microfilm of period newspaper and journal reviews, gathering information on every possible detail of the two exhibitions.

Among the decorative touches that will be re-created from "Arrangement in White and Yellow" is a skylight hung with a replica of Whistler's patented yellow-light scrim. The walls will be swathed in soft white fabric offset with molding painted brilliant yellow to set off plain white frames, which were, in their time, as radical as his etchings, Curry says.

"Now my rooms," Whistler once proclaimed, "are pictures in themselves."

"Although critics complained [in 1883] that the superabundant yellowness of the



gallery ‘almost gives one the jaundice,’ ” Curry says, “there was a general consensus that Whistler had created a background admirably suited to display his etchings.”

Decor in the resurrected 1884 “Arrangement in Flesh Colour and Grey” will be slightly less detailed, with walls draped in pink serge and a mantelpiece covered in gray velvet.

In the 1883 and 1884 shows, Whistler didn’t label his works with titles. Instead, he used small gold numbers, in keeping with his assertion that a name should have no bearing on a work’s success.

Myers and Curry plan to replicate these numbers, as well as Whistler’s brown-paper-covered exhibition catalog that listed the painting titles. The catalog for “Arrangement in White and Yellow,” Curry points out, included reprints of “critical quotations taken out of context by the artist to hoist journalists on their own petards.”

And the Freer exhibition would be incomplete without a guard dressed in the tints of a poached egg. “I’m expecting we’ll hire an actor who will dress in yellow and can be a docent on weekends,” Myers says. “We’d like our own poached egg man.”

### Masterful artworks

No citron-clad docent nor painstakingly replicated décor can compete, however, with the real heart of any Whistler exhibition—his masterful artworks.

The Freer owns impressions of 49 of the 51 etchings exhibited in 1883 in “Arrangement in White and Yellow.” These etchings, mostly of Venice, range from spare maritime glimpses to meticulously detailed street scenes.

Half of the 67 impressionistic paintings exhibited in “Arrangement in Flesh Colour and Grey” in 1884—most smaller than a sheet of notebook paper—also are in the Freer collection. These oils, pastels and watercolors convey mood with ges-



tural strokes and, in Whistler’s later nocturnes, with amorphous depictions of commonplace scenes.

Myers’ favorite? “Nocturne: Silver and Opal—Chelsea” from “Arrangement in Flesh Colour and Grey.” He explains, “It’s this blue-gray silver and opal evocation of a late night on the Thames, looking down-river from Whistler’s home toward the Houses of Parliament, with just a few lights on a distant bridge, that’s sort of vaguely visible through the thin, dark night.”

“Mr. Whistler’s Galleries” will offer 21st-century museum visitors something of the surprise and wonder felt by 19th-century viewers who found their way to Whistler’s innovative and influential exhibitions. ♦

**Above:** This artist’s concept in watercolor and ink of James McNeill Whistler’s 1883 exhibition “Arrangement in White and Yellow” was created by architect Jared Edwards in 1994. (Photo by Katherine Wetzel, Virginia Museum of Fine Arts)

**Opposite top:** Henri Fantin-Latour painted this “Portrait of Whistler,” oil on canvas, in 1865.

**Opposite bottom:** “Pink Note—Shelling Peas,” a watercolor on paper painted in 1883 or 1884 by James McNeill Whistler, will be on view in the exhibition “Mr. Whistler’s Galleries.”

# DNA analysis may turn tide on the discovery of new species at sea

By Jeffrey Cohn

Special to Inside Smithsonian Research



**N**early 308,000 whales, dolphins and porpoises die each year in commercial fishing nets, according to a new study released in June. Incredibly, some of the marine mammals taken as “bycatch” by commercial fishermen may belong to species still unknown to science.

During the last dozen years, Smithsonian marine mammal expert James Mead has helped identify two new species of marine mammals—the Peruvian beaked whale, found off the coast of South America and identified in 1991, and Perrin’s beaked whale, found off the California coast and identified in 2002. What’s more, Mead says, “there are certainly other unknown whale species” swimming the world’s oceans.

But whales live in places where humans infrequently venture. Many species are

rarely seen, and a few have never been seen alive. For decades, scientists who study and name new whale species have had to wait for dead specimens to wash in with the tide.

But the use of a powerful new tool, DNA analysis—the equivalent of taking a genetic “fingerprint” of an animal from samples of skin, bone and other tissue—has the potential to speed-up discovery of new marine mammal species. DNA analysis can also help scientists keep better track of populations of whales, dolphins and porpoises in the wild.

## Remarkable finding

Perrin’s beaked whale marks the first whale species named with the help of

DNA analysis. The discovery was sparked in 1997, when Mead received an e-mail from a graduate student in New Zealand who had doubts about a species classification Mead had given to four whale carcasses found near San Diego in the mid-1970s. Remains of the whales had been collected and stored at the Smithsonian’s National Museum of Natural History in Washington, D.C., and the Natural History Museum of Los Angeles County.

By analyzing tissue taken from a tooth and jaw of one of the whales in storage, the student, Merel Dalebout, now at Dalhousie University in Nova Scotia, obtained the DNA “fingerprint” of the animal.

*Perrin’s beaked whale marks the first whale species named with the help of DNA analysis.*

**Above: Pieter Folkens’ illustration depicts a Perrin’s beaked whale, officially named by scientists in 2002. Short tusks at the end of its beak and battle-scarred skin indicate this individual is a male.**

Dalebout's sample did not match DNA of tissues taken from other Hector's beaked whales, the species Mead had classified the specimens as in the 1970s. Nor did it match other animals in the database.

At the time he first examined the specimens—three male calves and an adult female—Mead had been uncertain that his classification was correct. For one, no Hector's beaked whales, native to the Southern Pacific, had ever been found in or near California waters. Although the specimens were remarkably similar to Hector's, Mead had a strong hunch they might be something else, but lacking enough evidence, he listed them as Hector's.

Using Dalebout's DNA data as a departure point, Mead conducted a second examination of the 1970s carcasses and documented minute differences in the mandibles, teeth and skulls of the new species—differences that, in addition to the DNA data, distinguished them as a new species. It was named Perrin's beaked whale after contemporary marine mammal scholar William F. Perrin.

"This finding is remarkable," says whale expert John Heyning, deputy director of research and collections at the Natural History Museum of Los Angeles County, in that it "exemplifies how museum specimens collected decades, or even centuries, ago continue to contribute to our current understanding of the natural world. It is also remarkable that the new species washed ashore along the California coast—waters considered relatively well-known biologically," Heyning adds. "It highlights how little we know about the ocean."

### **DNA database**

With the increasing acceptance of DNA as a tool for species identification, Mead now recommends that museums begin keeping and maintaining a universal database of genetic "fingerprints" of all marine mammal species, along with the physical remains of animal specimens. DNA from newly collected specimens can



**During an autopsy of a beaked whale at the National Museum of Natural History, James Mead carefully records details of the animal's morphology. Tissue samples are used for DNA analysis, as well as to determine the presence of toxic chemicals in an animal's organs. (Photo by Don Hurlbert)**

then be checked against DNA from known specimens.

In the past, scientists had to depend upon chance to find new whale species. Both the Peruvian beaked whale and Perrin's beaked whale, for example, were named only after their remains were found washed up on a beach, Mead points out.

"There is no reason to assume that all whale, dolphin and porpoise species living in the ocean can be described in this way," he says. Some species may live in areas where ocean currents do not take their remains toward land. Others may wash ashore in areas where no humans live.

To help ensure that new species of marine animals are documented, Mead now recommends that, whenever possible, tiny samples of skin tissue be taken from living animals encountered at sea. These samples can then be compared to material in a museum's DNA database. Scientists can take skin samples using a small hollow dart that is shot and retrieved from the deck of a boat. This method does not injure the animals.

DNA obtained in this way may aid in the identification of new marine mammals and help scientists get a better understanding of this mysterious family of ocean-dwelling creatures. ❖



**Supersonic.** A Concorde supersonic passenger jetliner owned by Air France landed at Washington Dulles International Airport on June 12 and was donated to the Smithsonian for display at the National Air and Space Museum's new Steven F. Udvar-Hazy Center. The plane will be the first Concorde exhibited by a museum in the United States and is the oldest of five in the Air France fleet. Air France ended 27 years of Concorde service in May. The sleek, delta-winged Concorde cruised at more than twice the speed of sound and at an altitude of up to 60,000 feet. The Udvar-Hazy



Center, located at Dulles Airport, will open to the public Dec. 15, 2003.

**Japanese prints.** A collection of more than 4,000 Japanese wood-block prints ranging from the mid-19th to the mid-20th century was bequeathed recently to the Smithsonian's Arthur M. Sackler Gallery by Robert O. Muller of Newtown, Conn. Long regarded by art historians, collectors and curators as the finest of its type in the world, this major collection is particularly rich in works by designers who adapted traditional, idealized print subjects—theater, the pleasure quarters, birds-and-flowers and landscapes—to modern tastes. Muller's extensive cataloging records, papers and library will be housed as a discrete unit within the Sackler. Plans for an exhibition, a dedicated research center and a related fellowship program are under way.

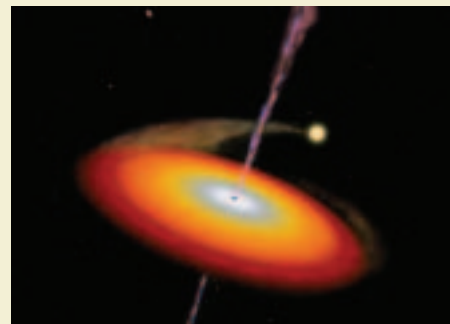


**"Courtesan,"** a 1916 woodblock print by Ito Shinsui, is one of more than 4,000 prints bequeathed recently to the Arthur M. Sackler Gallery by Robert O. Muller.

**Academy honor.** Bruce Smith, director of the Archaeobiology Program at the Smithsonian's National Museum of Natural History, has been elected a member of the National Academy of Sciences in recognition of his distinguished and continuing achievements in original research. Smith's research interests focus on the interaction between past human societies and their environments, particularly the spatial distribution of human settlements; subsistence activities on ancient landscapes; human patterns of reliance on plant and animal species; and the impact of humans on plants and animals. Smith also serves as curator of North American

archaeology and is a senior research scientist in the museum's Department of Anthropology.

**Black holes.** Evidence is mounting, say scientists at the Harvard-Smithsonian Center for Astrophysics, for the existence of an exotic new type of "intermediate-sized" black hole. Recent X-ray data, combined with optical and radio observations, strongly indicate that two objects in a distant galaxy, now classified as ultra-lumi-



**An artist's concept illustrates an intermediate-mass black hole feeding from a star that has wandered too close. (Illustration by David Aguilar)**

nous X-ray sources, may actually be intermediate-mass black holes. These mysterious phenomena appear to be hundreds of times larger than the stellar black holes that dot our galaxy, yet thousands to millions of times smaller than the supermassive black holes thought to power quasars.

**Forest donation.** Ninety-six acres of forested land was donated recently to the Smithsonian Environmental Research Center on the Chesapeake Bay by the Exxon Mobil Land Development Corp. The new property adjoins the center's established Edgewater, Md., land holdings. Local citizens' groups, which advocated for land conservation under the center's stewardship, were key to the the successful negotiation of this donation.

## Annotations and margin notes reveal thoughts of 16-century scientists

More than 600 volumes of the landmark book by 16th-century Polish astronomer Copernicus, *De revolutionibus orbium coelestium* (*On the Revolution of Heavenly Spheres*), exist in libraries and private collections around the globe. Incredibly, one man has laid eyes upon virtually all of them: Owen Gingerich, senior astronomer emeritus at the Smithsonian Astrophysical Observatory in Cambridge, Mass.

In 1971, Gingerich launched a survey of all known copies of Copernicus' book; the book described a universe in which the sun, not the Earth, lay at the center.

Recently, Gingerich compiled the results in a publication of his own, *An Annotated Census of Copernicus' De Revolutionibus* (Brill Academic Publishers, \$132). The book describes the provenances, annotations, marginal notes and physical condition of each volume. It also gives insight into how scientists communicated in the 1500s.

Because Catholic authorities were displeased by passages that seemed to contradict scripture, a papal decree in 1620 demanded text alterations in 10 places.

Gingerich learned that only about 60 percent of the copies of *De revolutionibus* in Italy at the time of the decree were "corrected." Virtually none of the copies outside Italy were touched. "Clearly, the rest of the continent viewed the Copernicus controversy as a local dispute," Gingerich says.

Marginal notes inscribed by the books' original owners showed a pattern of multiple entries of the most important annotations, demonstrating a network of communication. "It is the 16th-century equivalent of e-mail," Gingerich observes.

Gingerich is now cooperating with law enforcement officials, as copies of *De revolutionibus*, which can fetch hundreds of thousands of dollars, are irresistible to thieves. Using a computer database, Gingerich can identify copies of *De revolutionibus* that mysteriously turn up for sale in antique book markets.

"Unfortunately, because of thefts," he says. "I hold the dubious distinction of having seen more copies of the first edition of Copernicus' work than can now be located."



**Above:** Owen Gingerich has examined the margin notes and annotations of more than 600 volumes of *On the Revolution of Heavenly Spheres*, by Copernicus.

**Below:** Collard greens, black-eyed peas and rice make up a favorite Southern meal.

## African American cooking defines taste of the South



Drawing on memory and responding to necessity, enslaved Africans in the American South became masters of cultivating plantation crops—and geniuses at foraging for wild fruits and vegetables.

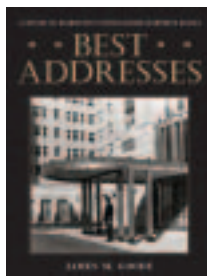
"What is amazing," says Portia James, senior historian at the Smithsonian's Anacostia Museum and Center for African American History and Culture, "was the many foods available to them—hundreds of varieties of greens, including dandelions, lambs quarter, chicory, purslane and Good King Henry; such fruits as paw paw and may pop; and many root vegetables no longer available."

Fishing and snaring small game also were popular. A tiny "ricebird" that fed in the rice fields was common table fare in South Carolina. The same holds true for roast groundhog and stewed squirrel in Virginia.

James is in the midst of an extensive study of African American food traditions, beginning with the plantation diet and moving through time to modern diets. Narratives from former slaves, as well as cookbooks and newspapers, have been a gold mine of information, she says.

James also is investigating the farming and food service industries; migration and diet; and dietary changes imposed by fast food, health food and religion-based food restrictions. Her research will culminate in a book and an exhibition at the Anacostia Museum in Washington, D.C., in 2006.

"Antebellum African American cooks in the South were largely responsible for melding European and African food traditions into what is known today as Southern food," James points out. "Southern food traditions are, in many cases, indistinguishable from African American food traditions."



**Best Addresses: A Century of Washington's Distinguished Apartment Houses**, by James M. Goode (Smithsonian Books, 2003, \$65).

An intimate and lively tour behind the façades of Washington, D.C.'s finest beaux arts and art deco apartment buildings.

**Voyager's Grand Tour: To the Outer Planets and Beyond**, by Henry C. Dethloff and Ronald A. Schorn

(Smithsonian Books, 2003, \$34.95). A comprehensive account of one of humankind's foremost scientific achievements—the building, launch and incredible discoveries made by the National Aeronautics and Space Administration's Voyager spacecraft.



**Washington Odyssey: A Multicultural History of the Nation's Capital**, by Francine Curro Cary (Smithsonian Books, 2003, \$21.95). Seventeen

wide-ranging essays trace the growth and transformation of Washington, D.C.'s ethnic and cultural communities.

**Dragonflies of the World**, by Steve Brooks (Smithsonian Books and the Natural History Museum, London, 2003, \$16.95). Reveals the beauty and complex lives of these ancient insects.

**Space Stations: Base Camps to the Stars**, by Roger Launius

(Smithsonian Books, 2003, \$35.95). A highly original blend of history and popular culture that explains why the dream of a permanently occupied space outpost has captivated so many for so long.



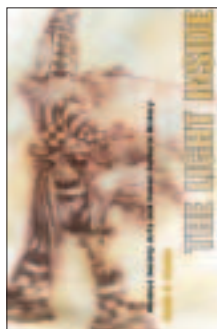
**The Fossils of Florissant**, by Herbert W. Meyer (Smithsonian Books, 2003, \$39.95). The most diverse fossil bed in the United States provides a unique look at what life was like 34 million years ago.

**Cheating Death: Combat Air Rescues in Vietnam and Laos**, by George J. Marrett (Smithsonian Books, 2003, \$27.95). Stories from an Air Force pilot who flew deadly aerial combat missions in Vietnam.

**Uncovering Australia: Archaeology, Indigenous People and the Public**, by Sarah Colley (Smithsonian Books, 2003, \$24.95). A bold description of archaeology, not only in Australia but everywhere indigenous people are fighting for their rights.

**The Light Inside: Abakuá Society Arts and Cuban Cultural History**, by David H. Brown

(Smithsonian Books, 2003, \$44.95). A revealing inside look at the remarkable creativity and experience of artists living in a fraternal Cuban society.



**Jean Ritchie Ballads: From Her Appalachian Family Tradition** (Smithsonian Folkways Recordings, 2003, \$15 CD). One of America's finest and best-known traditional singers performs outstanding Appalachian versions of English and Scottish narrative songs. First issued in 1961.

**Classic Old-Time Music From Smithsonian Folkways Recordings** (Smithsonian Folkways Recordings, 2003, \$15 CD). A collection of 29 social and instrumental string-band songs by Dock Boggs, Roscoe Holcomb, Wade Ward, Tommy Jarrell and others.

**The Singing Kettle: Sing-along Songs from Scotland**

(Smithsonian Folkways Recordings, 2003, \$15 CD).



Contains 17 enchanting children's songs sung by a beloved group of performers from Scotland.

Books published by Smithsonian Books can be ordered from P.O. Box 960, Herndon, Va. 20172-0960. To order by phone or for more information, call 1 (800) 782-4612. There is a \$3.50 postage and handling fee for the first book ordered and \$1 for each additional book.

Smithsonian Folkways Recordings can be ordered from Smithsonian Folkways Mail Order, Victor Building, Suite 4100, MRC 953, P.O. Box 37012, Washington, D.C. 20013-7012. To order by phone or for more information, call (202) 275-1143 or 1 (800) 410-9815. There is a \$5.50 fee for shipping and handling; call for other shipping prices.



## Native American Photography at the Smithsonian: The Shindler Catalogue

By Paula Richardson Fleming (Published by Smithsonian Books, 2003, \$39.95)

At-Pe-Tu-To Ka-Tsha, a Sioux warrior whose name translates as “The Other Day,” grips a bow and two arrows across his lap as he sits expressionless for the camera. A dark fur hat covers his forehead and trails down his right shoulder. An eagle feather headdress fans out in a half-circle backdrop to the Wa-Pe-Ton warrior’s proud, angular face.

But his tailored jacket and bow tie betray his connections with the white settlers and their New World and a way of life that would soon come to overwhelm his people.

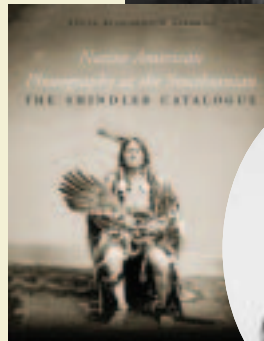
At-Pe-Tu-To Ka-Tsha’s portrait was taken in the James McClees Studio in 1858 when he traveled, as part of a delegation, from the remote Dakota territory to sign a peace treaty in Washington, D.C. The portrait is among 300 reproduced in *Native American Photography at the Smithsonian: The Shindler Catalogue*, a new book written by Paula Richardson Fleming, a photographic archives specialist at the National Anthropological Archives of the Smithsonian’s National Museum of Natural History, and published by Smithsonian Books.

Fleming’s detailed introduction and photo captions—accompanying remarkable portraits of Cheyenne, Sioux, Pawnee, Cherokee and other Native Americans—offer a fascinating view of a quickly vanishing culture on the American frontier. Her work is the first true

identification of these images in regard to both photographer and sitter.

Westward expansion into the U.S. territories was facilitated by numerous peace treaty negotiations between federal government officials and Native Americans, many of whom traveled to Washington, D.C., specifically for the negotiations.

While serving as a delegate in the capital, The Other Day met and married a



**Fox Chief Kiyo-Kag (One Who Moves About Alert), top, and Santee Chief Wamdi-Ka-Wa-Man-Ni (He Walks Following Eagles), shown here at age 14, are two of the many portraits featured.**

waitress from his hotel. In 1862, he saved 62 settlers from a raid led by Little Crow. He became a hero to the settlers and, in 1867, returned to Washington, D.C., to receive a grant of \$2,500 from Congress.

Even as the U.S. government negotiated with the Indians, the overriding realiza-

tion among many in Washington, D.C., was that Indian populations would be greatly diminished by the conquering of the West. Joseph Henry, the Smithsonian’s first Secretary, wrote to the Commissioner of Indian Affairs in 1859 pleading for government support in photographing Native American tribes.

“The Indians are passing away so rapidly,” Henry wrote, “that but a few years remain, within which this can be done and the loss will be irretrievable and so felt when they are gone.” The government agreed to support the photographing of the Native American delegates.

At the behest of the Smithsonian, Antonio Zeno Shindler, a Bulgarian-born photographer based in Washington, D.C., gathered some of his own images and those from a variety of different studios and photographers. He produced an exhibition of portraits that was displayed at the Smithsonian Castle in 1869.

The Shindler collection may well have been the first exhibition of photography in a museum in the United States. Copies of the images were circulated to major museums worldwide and remain part of the core Native American collections at many of these museums.

“We have no images of the exhibition itself, so we don’t know what it looked like,” Fleming says. One 42-page catalog held in the National Anthropological Archives is all that remains of Shindler’s show.

Fleming’s book is a revised version of this fascinating catalog. An excellent gathering of portraits, *Native American Photography at the Smithsonian* also is an important work of scholarship. By tracking down, crediting, dating and properly identifying each of the many images in this book, Fleming has greatly enhanced the value of these photographs to scholars.

—Daniel Friend

## *MegaSpinfaktor yo-yo given to Smithsonian — with string attached*

Yo-yo maestro Rick Wyatt was wide-awake when he set a world record for sleeping in April 2001 at the Midwest Regional Yo-Yo Championships in Bloomington, Minn.

Wyatt's yo-yo spun at the bottom of its string—"sleeping" to yo-yo hounds—for an unbelievable 13 minutes and five seconds. He wasn't flinging just any old yo-yo that day, but a high-tech MegaSpinfaktor, a production model made by YoYoJam, a mom-and-pop company out of Tallahassee, Fla. At \$85, the MegaSpinfaktor is a thin, precision-balanced butterfly yo-yo with an adjustable gap and recessed weight rings. Its double ball-bearing axle and O-ring response system make this one yo-yo that can really settle down into some long, long sleeps.

In June, Wyatt donated his well-worn MegaSpinfaktor yo-yo to the Cultural



**Using the yo-yo that he donated to the National Museum of American History, Rick Wyatt demonstrates his world-record-setting technique for making a yo-yo sleep.**

History Division of the Smithsonian's National Museum of American History. The museum's interest in yo-yos reflects its goal to focus on areas of American enterprise emblematic of the material culture of the United States.

"YoYoJam and company owner Dale Bell represent the front-end of yo-yo engineering today," Museum Specialist David Shayt explains. "Their yo-yos push the envelope of technology and use of new materials."

Shayt has created a museum "biography" for Wyatt's yo-yo consisting of a thick file folder packed with reference material on Wyatt's career, the YoYoJam Co., newspaper clippings from yo-yo competitions, photographs, printouts from yo-yo Web sites and other information.

Yo-yos and toys may be taken lightly by some, Shayt says, but they are important objects of American culture. "How we play says a lot about who we are as a nation. The design and popularity of yo-yos are part of the American experience."

—John Barrat

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