New IMAX movie gives viewers an up-close look at Galapagos Islands

By Michael Lipske
Special to Research Reports

It this day, Carole Baldwin is grateful that, as she sank to the floor of the Pacific in a four-person submersible one morning last year, the pilot remembered to tell her about the alarming noises she would soon hear.

"I was glad he "warned me," says Baldwin, a marine biologist in the Division of Fishes at the National Museum of Natural History. "There are tremendous pressure changes and a lot of cracking and popping noises." And the drips falling on her head? Not leaking seawater, just condensation from the sub's cooling system.

Baldwin's scientific explorations, undersea and on land, are revealed in "Galapagos," the 3-D IMAX motion picture that premiered Oct. 27 at the museum's John D. Rockefeller Jr. Hall. The 40-minute film follows the scientist on her first research trip to the Galapagos Islands, 600 miles west of South America, on the equator. The isolated, geologically young archipelago and its wildlife, studied by Charles Darwin in the 1830s, has long lured evolutionary biologists.

The ocean's treasures

Baldwin (who studies the evolution of ocean fishes) is the movie's human lead, but she shares the screen with a cast of blue-footed boobies, sea lions, moray eels, hammerhead sharks and other wild residents of this Ecuadorian national park. As many Galapagos animals have little fear of humans, Baldwin frequently found herself inches away from creatures that live nowhere else on Earth, such as giant tur- toises and marine iguanas, which Darwin called "imps of darkness."

Viewers of the film also get face-to-face with the wildlife, thanks to close-up cinematography and the hyper-realistic 3-D effect provided by the IMAX camera used to make the movie. One "Galapagos" review described the documentary as a "high-tech, virtual-reality hybrid of 'Wild Kingdom' and a Jacques Cousteau special."

When Baldwin scuba dives to net museum specimens in the movie, dazzling schools of silver pelagic jacks and a 30-foot column of swirling barracuda surround her. The cold ocean water that wells up around the tropical islands is rich in nutrients that support vast numbers of animals. "I have never seen greater numbers of fishes anywhere," Baldwin says. "Galapagos" viewers, of course, stay warm and dry while tagging along on those dives. Many will be glad that the reality is only virtual when Baldwin finds herself stuck in the center of a large school of hammerhead sharks—"40 to 50 would be around us at one time," she says—or when slicing ranks of moray eels, seemingly curious, press close to study the marine biologist. "They tended to come right at my face," Baldwin says of the sharp-toothed, strong-jawed creatures. She remembers the experience as "fodder for nightmares."

The Johnson Sea-Link

The highlight of the expedition was deep-sea diving in the Johnson Sea-Link submersible. Rated to a depth of 3,000 feet, the undersurface craft provides a panoramic view through its 5-inch-thick acrylic windshield. A mechanical arm on the sub manipulates three collection devices—a suction tube, a claw and a scoop—used to net small creatures. A separate, funnel-shaped device slurps up gelatinous organisms such as jellyfish.

"One of the interesting things about the submersible work we did was that we worked at a variety of different levels—between 400 and 3,000 feet," says Baldwin, who made about 20 three-hour dives in the Johnson Sea-Link. "I think, typically, when people have access to submersibles, they don't work in the shallower areas" that are still beyond the range of scuba divers. "They just go straight to deep bottom."

With the sub's pilot guiding the 14-ton craft along the islands' underwater volcanic walls, scientists on the expedition examined the little-explored realm between 400 and 1,000 feet. "Quite a few of the new species that we collected came from that deep reef area," Baldwin says. Batfish that stride across the ocean bottom on leglike fins, viper fish equipped with formidable long fangs and other odd creatures were brought back from the deep to add to the Museum of Natural History's preserved fish collection.

New species

While "Galapagos" tours IMAX theaters around the world, the work of the expedition's scientists is far from done. Baldwin will be describing several of the new species collected on Johnson Sea-Link dives, including a new kind of cat shark and a new sea bass, as well as identifying the scores of larval fish that she brought back to Washington, D.C. Almost every night during the expedition, she hauled a plankton net over the side of the research ship, Seward Johnson, which was the scientists' base, to collect the tiny, young fishes that are one of her special interests. Bottles filled with small bottles of these larvae now crowd the floor of her office, waiting for Baldwin to determine the species to which each fish belongs. The task is made more difficult by the fact that larval fish usually lack the color patterns and other features that help identify adults.

One reason for her interest in these specimens is that pelagic larvae, like the ones in the bottles, are the stages of marine fishes that colonize isolated islands like the Galapagos. Distance swimmers, such as tuna and sharks, easily cover vast stretches of ocean as adults, but most fish species..."Galapagos," continued on Page 6
Ancient Chinese musical instruments • The popular story of the Greek mathematician Archimedes running naked through the streets shouting “Eureka! I’ve found it!”—when he figured out (while taking a bath) how to calculate the proportion of gold and silver in King Hiero’s crown—is probably apocryphal. However, there is no question that both serendipity and the commonplace play a role in scientific discovery. This is especially true in the field of archaeology, in which something that changes our knowledge of the world can be unearthed by ordinary people just doing a day’s work.

Seldom, however, does such an accidental find reveal the mysteries of an ancient culture and inspire a new generation to carry it proudly into the future. That is what happened in September 1977, when members of the Chinese People’s Liberation Army, excavating a factory site in Hubei Province, stumbled upon the fifth century B.C. tomb of Marquis Yi of Zeng. Although only a minor official of a petty state during the Warring States period (481-221 B.C.), the marquis was laid to rest with goods befitting his social status in this life and to serve him in the next. Buried with him in the four-chambered tomb were percussion, string and wind instruments. The largest of the instruments was a three-tiered, L-shaped rack of wooden beams from which were suspended a set of 64 bronze bells in graduated sizes. Nearby lay a two-tiered bronze stand holding 32 chime stones; a large pole drum; two smaller drums; seven 25-string, zither-like instruments; four mouth organs; two panpipes; and two flutes.

These instruments constitute the oldest musical assemblages surviving from any culture, and they are the central focus of an exhibit titled “Music in the Age of Confucius,” opening April 30, 2000, at the Smithsonian’s Arthur M. Sackler Gallery. While the 64-bell set from Marquis Yi’s tomb cannot travel outside China, the exhibit will display—for the first time in the United States—the next-largest set of 36 bronze bells, taken from an adjacent tomb. Visitors will be able to hear their sounds on an audio guide. Performances of ancient and modern Chinese music, featuring bells, string instruments and stone chimes, will be offered twice daily.

Unlike the National Gallery of Art’s recent exhibition, “The Golden Age of Chinese Archaeology,” which gave a sweeping overview of 6,000 years in Chinese history, the Sackler show will treat the tomb of Marquis Yi as a time capsule that preserved a moment in Chinese history some 2,500 years ago. The exhibition is designed to show how a single archaeological find—unique to ancient Chinese culture—can open new vistas on the past, influence the present and shape the future. Discovery of the marquis’ burial immediately followed the end of the Cultural Revolution in 1976. Chinese scholars were allowed to return to work, and their publications once again appeared in the West. At the same time, the drive for economic development spurred the construction of roads, bridges and buildings. The digging uncovered a whole new Old World.

While it is unknown whether ancient Chinese music was ever written, we do know from the literature of the period that at least some of it was sung. The location of the percussion, wind and string instruments in the central chamber of the tomb provided the first concrete evidence that music figured prominently in courtly activities. Scenes painted on a lacquered wooden box from the tomb illustrate how the bells were played and the animated dancing that might have accompanied the playing of them.

Beyond the ramifications for scholarship, these instruments reveal the historical roots of Chinese music. They inspired a new generation of Asian and Asian American musicians to compose and perform contemporary music steeped in this millennium-old Chinese tradition. Out of this accidental discovery, the distant past is shaping the present and the future and building a bridge that spans the boundaries of culture, politics and time. Eureka, indeed!

—Jonny So, Curator of Ancient Chinese Art, Freer/Sackler Galleries
Research focuses on George Catlin’s documentation of Indian culture

By Brenda Kean Tabor
Special to Research Reports

In 1879, the Smithsonian became home to an extraordinarily rich collection of Native American paintings and artifacts that had been created and assembled by an early American visionary named George Catlin. Housed in the National Museum of American Art and the National Museum of Natural History, this collection of 445 paintings from his Indian Gallery, selected artifacts and a notebook are currently the subject of several extensive research projects that will result in a new Catlin exhibition at the National Museum of American Art’s Renwick Gallery in 2001. A book and a Web site also are planned.

“There is no more important body of work in early American art than George Catlin’s Indian Gallery,” Elizabeth Broun, director of the Museum of American Art, says.

While the historic Patent Office Building, which houses the National Museum of American Art, is closed for renovation, this special exhibition will “continue to highlight the unique holdings of the museum in the Renwick Gallery building, which is almost contemporary with Catlin,” Therese Heyman, guest curator, says. She is researching Catlin’s connection to the Smithsonian’s first Secretary, Joseph Henry, and working on the exhibition with museum Curator George Gurney.

A biographical sketch

Catlin was born in Wilkes-Barre, Pa., in 1796 and followed the path of many creative musicians of the Peale and Thomas Charles Willson ranks with though self-taught, man, Catlin, scholar, part show-true dream as an then pursuing his true dream as an artist. Part serious scholar, part show-artist. Part serious scholar, part show-man, Catlin, through self-taught, rankedscholar, part show-man, Catlin, through self-taught, ranked with Charles Willie Pode and Thomas Sully as an academicians of the Pennsylvania Academy of Fine Arts. In demand for his miniatures and portraits, Catlin was hungering for more interesting subjects when, one day, he saw a group of American Indians in Philadelphia.

Later describing his obsessive lifetime devotion to documenting American Indi-ans, Catlin wrote in Letters and Notes on the Manners, Customs and Condition of the North American Indians, one of two vol-umes he published on this group: “Man, in the simplicity and loftiness of his nature, unrestrained and unfettered by the disguises of art, is surely the most beautiful model for the painter, and the country from which he hails is unquestionably the best study or school of the arts in the world... The history and customs of such a people, preserved by pictorial illustra-tions, are themes worthy of the lifetime of one man, and nothing short of the loss of my life, shall prevent me from visiting their country and of becoming their historian.”

Catlin’s travels

In 1826 and subsequent years, Catlin painted Red Jacket, a Seneca, and other Native Americans in west-ern New York. In the spring of 1830, he began an extensive journey, traveling west of the Mississippi with William Clark, the for-mer co-leader of the Lewis and Clark expedi-tion. Clark was then superintendent of Indian affairs for the western tribes and was traveling to make treaties with the Iowa, Missouri, Sauk, Omaha, Suck and Fox tribes. In 1832, Catlin visited tribes of the upper Missouri as a guest of the American Fur Co. and started painting landscapes and scenes of villages and tribal life. “His landscapes were some of the earliest depictions of that scenery,” Gurney says. “The portraits have a directness that is very unusual.”

Catlin also wrote extensive descriptions of the Indians he met on his trips.

Self-promoted exhibits

By 1833, Catlin had begun exhibiting his paintings in Pittsburgh, and later in Mid-western towns. He eventually took his paintings to New York, Washington, D.C.; Philadelphia and Boston, where he piqued the curiosity of the public and met with enormous success.

Six years later, he sailed for Europe. While in London, he exhibited both paint-ings and artifacts he had collected, includ-ing costumes, weapons, musical instru-ments and a full-sized Crow Indian tepee. He sometimes employed live Indians to give demonstrations in an exhibition hall. In 1843, Catlin published a popular lav-ishly illustrated two-volume book titled Letters and Notes on the Manners, Customs and Condition of the North American Indians. And in 1844, he published Catlin’s North American Indian Portfolio, a collec-tion of 25 lithographic reproductions of some of his most popular paintings.

Disappointments

In 1845, Catlin moved his show to Paris, only to return hastily to England in 1848 because of French uprisings. But the novelty of his exhibitions had worn off and that, together with poor financial management, led to his bankruptcy. A prominent art collector and business-man named Joseph Harrison, who knew Catlin through other art dealings, paid off most of Catlin’s debts and had his paint-ings and a large portion of his ethnographic collection shipped to Philadelphia, where they were stored in Harrison’s boiler factory, Gurney explains.

Catlin continued to travel in South America and the U.S. Far West. He some-time used a camera lucida technique to transfer images from the Indian Gallery onto canvases, which he then painted. Heyman says these new works, which he called his “Cartoon Collection,” often tended to depict “combined portraits of Indians that he had painted earlier,” Gurney says. Catlin spent the rest of his life trying to sell this Cartoon Collection to the American government. However, despite the support of Smithsonian Secretary Joseph Henry, who arranged for Catlin to paint and exhibit his work in the Castle, Catlin was unsuccess-ful. He died in 1872 in New Jersey.

Catlin’s works donated

In 1879, Thomas Donaldson, a lawyer who was interested in Indian affairs and who knew then-Secretary Spencer Baird, persuaded Harrison’s widow to donate Catlin’s collection to the Smithsonian. Although parts had been damaged by fire, water and pests, a large proportion was sal-vable. The paintings have been most recently housed at the Museum of Ameri-can Art, where they have been shown indi-vidually and in small groups from time to time. The artifacts that Catlin collected are in the National Museum of Natural History’s Anthropology Department.

‘Catlin,’ continued on Page 6

This wooden cradle board, left, is among George Catlin’s Indian artifacts that are housed in the National Museum of Natural History’s Anthropology Department. (Gift of Sarah Harrison)
African sculptor's ‘concrete vision’ results in creation of outdoor screens

By Janice Kaplan
National Museum of African Art

In the winter of 1993, Sylvia Williams—then director of the National Museum of African Art who has since died—organized several trips to New York City to show the museum's chief conservator, Steve Mellor, and exhibition designer Alan Knezevich four works of art she was interested in acquiring for the museum.

Once they arrived on the upper east side, Williams, Mellor and Knezevich viewed what was—then by New York standards—an unusual sight. Near the corner of 91st Street and Madison Avenue, in the outer wall of a private garden behind a large apartment building, were four large openwork concrete screens depicting scenes of Africa.

"Here was the juxtaposition of this busy New York street and this quiet garden with these scenes of musicians and dancers and cars," Curator Blythe Freyer says. "Your first thought is that they seem so lighthearted and that they're made of something—you think of being used for sidewalks or construction, but not a particularly lively medium."

This month, the screens—created by Nigerian artist Adebisi Alakanji in 1966 and donated to the museum in 1994 by Waldemar A. Nielsen and his wife, who commissioned them—go on view at the National Museum of African Art as the centerpiece of the exhibition "A Concrete Vision: Oshogbo Art in the 1960s."

The screens will be shown in a room next to works by 10 other artists from Oshogbo, Nigeria, who, also working in the 1960s, combined traditional forms with modern artistic influences and a willingness to experiment with new techniques and materials.

"The artists of the Oshogbo art movement in the early 1960s were not university art students, but townpeople who had never been exposed to formal art training," Roslyn Waller, director of the museum, says. "The most talented and creative individuals became professional artists and attained international reputations through exhibitions in Europe and America. Many such as Jimi Uremohamah and Twins Seven-Seven, remain active participants in Nigeria's cultural life."

**History of the screens**

Concrete typically conjures up images of sidewalks and roads, basements and construction sites. But Alakanji's screens are about movement and light. "In some ways, they remind me of stained glass windows," Freyer says. "They're like the framework for the windows, without the glass."

Alakanji was born in the 1930s and began his career as a bricklayer—a job that taught him to build with fired mud brick, cement block and mud walls that are cement coated. His transition to creating works of art began with a sculpture contest for cement animals based on the heraldic animals found on the balustrades of Afro-Brazilian-style Yoruba houses in Nigeria. This led to commissions, including one from Nielsen, past president of the African American Institute in New York City.

While there are probably only a handful Alakanji screens outside Nigeria, many more exist in his native country. In addition to screens he created for other artists' houses and public buildings, Alakanji was instrumental in helping to build Oshogbo's shrine to the goddess Oshun, as well as entrance gateways, wall reliefs and freestanding sculptures there.

As for the Nielsen screens, they measure 62 inches high, 40 inches wide and 2 inches deep. Their subject matter reflects contemporary life in the Yoruba town of Oshogbo—a man pumping gas, motorists, a drummer and a dancer.

**Conservation treatment**

Every object that becomes part of the National Museum of African Art's permanent collection goes to the museum's conservation laboratory. The screens enjoyed an extended visit in the lab, where museum conservators spent nine months stabilizing the fragile sculptures, devising a treatment plan and preparing them for exhibition.

When the African Art Museum acquired the works in 1994, great care was taken by a team from the museum to remove the screens from their outdoor setting, pack them and ship them to Washington, D.C.

Close examination in the conservation lab revealed the actual state of deterioration: shrinkage cracks, misaligned fragments from the original manufacture, extensive fracturing hidden by old restorations and completely shattered lower edges caused by the screens resting outdoors directly on the ground for more than 20 years.

"Concrete inherently has small cracks," Mellor says. "This is part of the natural curing process for concrete. But the harsh New York winter climate and the humidity accelerated that deterioration process."

"When he created the screens, Alakanji reinforced the concrete with iron rods," Mellor adds. "Alakanji reinforced the concrete with iron rods. However, outdoor exposure and imperfect construction caused the iron to corrode and the screens to crack and break," Mellor adds. During the months the conservators worked to mend the damaged screens, numerous clamps and cotton twill saps—"tourniquets"—were tied around the arms and legs of the concrete figures to hold together the fragile limbs—many with iron bars protruding like dislocated bones.

**Earlier restorations**

Conservation staff determined that, over the years, the screens were repaired five or six times using a variety of fill materials. These efforts proved to be unightly, ineffective and difficult to reverse. Patches applied during earlier repairs were removed at the museum using solvents, scalpels and dental tools. The staff devoted dozens of hours to drilling out the hard-to-reach deposits.

When the African Art Museum acquired these screens, they had to be removed altogether and replaced. It was determined that this approach would be too invasive for the screens; their inherent fragility would make removal of the iron rods too risky.

"The fact that we're approaching the screens as indoor concrete sculptures, as opposed to an outdoor architectural load-bearing structure, is what differentiates our treatment from that of the building industries," Stephanie Hornbeck, also a conservator, says.

In the months before the exhibition, the conservators focused their attention on reaffixing the numerous loose pieces of concrete—some as large as 8 inches and some as small as a quarter-inch—that had broken off of the works. A final step was to repair the hundreds of gaps and weak areas in the screens. "Conservation treatment...continued on Page 5"
Smithsonian film archives Wendy Shay, Mark Taylor and Pam Wintle share an urgent problem. All three are custodians of what are known as “orphan” films, one-of-a-kind moving pictures that are not part of a large collection and which fall outside commercial film preservation programs.

For example, in the National Museum of American History’s Archives Center, where Shay works, there is a home movie shot by musician Harry Carney while he was on tour with the Duke Ellington Band in the late 1930s and early 1940s. The National Air and Space Museum Archives, where Taylor works, contains rare 1936 home movie footage taken aboard the ocean liner Queen Mary and inside the great Hindenburg airship. At the National Museum of Natural History’s Human Studies Film Archives, Wintle is caretaker of many old films, including a 1934 film shot by anthropologist Melville J. Herskovits.

To counteract the deteriorating condition of these films, the Smithsonian’s Human Studies Film Archives and the National Museum of American History’s Archives Center have combined forces with the National Air and Space Museum’s film archives to launch a new grant-funded initiative to preserve “orphan” films. The initiative is designed to identify and preserve “orphan” films for study, education and exhibition.

In the coming months, National Film Preservation Foundation planning meetings will take place to determine the criteria for selecting films to be preserved through the new initiative. “We will be preserving orphan films,” says Taylor. “This is a complete and comprehensive plan to preserve orphan films. It is a national effort, and we are not ready to say, ‘We have done it.’ We are in the beginning stages. The planning meetings are to determine what the standards will be. They will go into the detailed workings of how to select films and preserve them.”

Wendy Shay preserves rare films in the National Museum of American History’s Archives Center. (Photo by Richard Strauss)

Wendy Shay preserves rare films in the National Museum of American History’s Archives Center. (Photo by Richard Strauss)
only makes journeys to new waters as plankton drifting at the surface of the sea.

An underwater light show
Baldwin's museum labor did not make it into "Galapagos." Nor did every experience during the expedition end up on film. Because the 240-pound IMAX camera's special underwater housing cannot be used at very deep depths, and because it would not fit inside the Johnson Sea-Link, plankton drifting at the surface of the sea.

"Galapagos," continued from Page 1

only the scientists witnessed the spectacular light show that accompanied the sub's descents and ascents through sunless depths.

"We would turn off all the lights inside and outside the sub," Baldwin remembers, "and as the sub either ascended or descended, it bumped into little gelatinous creatures that luminesce. Every now and then, the sub must have hit something big, because you would get this huge burst of light." It looked, says the scientist, "like it was raining a billion fireflies."

The Johnson Sea-Link submersible hovers above the water before carrying Carole Baldwin and a colleague to an ocean depth of 3,000 feet. (Photo by Peter Coan)

"Catlin," continued from Page 3

One of Catlin's unpublished sketchbooks, Notes on Indians, was purchased in 1971 by the University of Pennsylvania. Grant money has been used for the conservation of the book, which has been taken apart and digitized. The text has been magnified and clarified for transcription. "We now have enhanced and enlarged photographs of the pages," Garnett says.

The new information that is gained will be used, in conjunction with other texts, to look for examples of the systems that Catlin used to record details of color and to manufacture costumes and backgrounds for his Indian Gallery paintings. It also will be used as a resource for his later writings and illustrations.

Heyman, who was formerly senior curator at the Oakland Museum in California and is also the wife of retiring Smithsonian Secretary I. Michael Heyman, has spent the last two years analyzing the diaries of Joseph Henry in preparation for the exhibition and the book that will accompany it. She also has researched the many letters between Henry and various Indian specialists, which can be found at the Joseph Henry Papers Project in the Smithsonian's Arts and Industries Building and at the Smithsonian's Archives of American Art, in order to analyze the relationship between Catlin and the Institution.

A fascinating tale is laid out in these letters and documents, which says a lot about their relationship and about government patronage," Theresa Heyman says, describing how, for a brief period toward the end of his life, Catlin painted in a tiny quills that cover the hide need to be checked and secured," Greene says. "The shirt, which was worn by a Mandan whom Catlin painted, was water damaged and has dried and hardened in a misshapen form. We will be able to soften the materials and reshape them."

These artifacts, Greene adds, not only may be put on display in the exhibition but may also be used in the catalogue in the book and digitized for inclusion on the exhibition's Web site.
Africa's history•from early civilization

Adm. Donald Engen, who was killed in a

Understanding invasion

his mate, Ling-Ling, "who died of heart

National Museum of Natural History

On Dec. 15, the

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quently at the museum in conjunction

ary societies. Films, lectures and other

as well as traditions sustained and reinter-

by the African diaspora in Asia,

and global reach. The African Voices

presents the richness and diversity of
cultures throughout the African continent,
as well as traditions sustained and reinter-

Africa's history—from early civilization

along the Nile River through contempo-

societies. Films, lectures and other

public programs on African and African

American cultures will be presented fre-

equently at the museum in conjunction

with African Voices.

Giant panda dies. The National Zoologi-

cal Park's 28-year-old giant panda, Hsing-

Hsing, died at the Panda House on Nov.

28. Veterinarians had treated Hsing-Hsing

since May 15 for nonreversible kidney dis-

ease. As a result of this illness, he had been

in declining health for several months.

National Zoo veterinarians and the animal

caretakers most familiar with the panda

decided that humane euthanasia was best

for the panda, who had become increas-

ingly weak and inactive. Hsing-Hsing and

his mate, Ling-Ling, who died of heart

failure in 1992, came to the National Zoo

from the Beijing Zoo in 1972. The pair of

giant pandas was presented to the people

of the United States as a gift of friendship

following President Richard Nixon's visit
to China. Since 1972, the National Zoo

has been a leader in advancing the under-

standing and conservation of giant pandas.

The best estimates are that only 1,000

giant pandas survive in China today, the

only country where the animals are found

in nature.

Alien species. Understanding invasion

pathways, or transfer mechanisms, is the

key to reducing the risk of future biologi-

cal invasions. For the first time, experts

from 15 nations, representing a wide vari-

ey of disciplines and professional affili-

ations, gathered at the Smithsonian Envi-

ronmental Research Center in Edgewater,

Md., in November to exchange informa-

tion on species invasions across geographic

regions, ecosystems and taxonomic groups.

Invasion patterns, prevention and manage-

ment of plants, invertebrates, vertebrates

and pathogens were among the topics of

discussion. The goal of the conference was

to foster collaboration among the world's

leaders in the field of species invasion,

toward the end of devising a practical,

comprehensive and effective strategy to

turn the tide against harmful invasive

species worldwide. The Smithsonian Envi-
nronmental Research Center is in its

year of studying the relationships between

land and estuarine environments, the

interactions of fresh and salt water, and the

impact of human activity on coastal systems.

The start of planets. The popular image

of nascent planetary systems as thin, spin-

ning pancakes of cosmic dust and debris

may be changed by a new theory devel-

oped by scientists and their colleagues at

the Smithsonian Astrophysical Observa-

tory in Cambridge, Mass. This theory

shows how that disk of debris is trans-

formed into a very distinct ring once

Planetary bodies start to form. By analyz-

ing Hubble Space Telescope images of a

suspected young planetary system around

the star HR 4796A, Scott Kenyon and

Kevin Wood, SAO astrophysicists, and

Barbara Whitney and Michael Wolff of the

Space Science Institute have produced a

computer model that suggests the ring

around that object probably is a common

feature of all planetary systems. Indeed,

the well-known Kuiper Belt of asteroids in

our own solar system may be the residual

remains of just such a ring.

Technology transfer. A three-member

team from the Smithsonian and Johns

Hopkins University has received a grant

from the National Center for Preservation

Technology and Training of the National

Park Service to identify gilding techniques

on ancient bronze without taking samples

from the works of art. Sampling is an

accepted research practice but has the dis-

advantage of requiring that the scientist

remove a tiny piece from a hidden part of

an object to determine whether a test,

commonly used in the automotive, aero-

space and many other industries, also

could be applied to the field of art conser-

vation. If so, this technique would provide

an important tool for research on ancient

metalworking and the authentication of

works of art. Gilding, the application of

gold and tin to a support and the use of

other metals, is found on art from a wide range

of time and place. The different tech-

niques by which the gilded layers "were

removed a tiny piece from a hidden part of

an object to determine whether a test,

commonly used in the automotive, aero-

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the photographer incorporates his own

nude body into a range of isolated settings,

emphasizing its bond to the natural world.

Collecting Native America, 1870-1960,

edited by Shepard Krech III and Barbara A.

H. Hunt (Smithsonian Institution Press,

1999, $45). The book's contributors exam-

ine the motivations, intentions and actions

of 11 collectors who devoted parts of their

lives and fortunes to acquiring American

Indian objects and founding museums.

The Stone Carvers: Master Craftsmen of

Washington National Cathedral, by Mar-

jorie Hunt (Smithsonian Institution Press,

1999, $24.95). In his collection of self-portraits,

the photographer incorporates his own

nude body into a range of isolated settings,

emphasizing its bond to the natural world.

Music of Indonesia—Sulawesi: Festival,

Funerals and Work, Vol. 18 (Smithsonian

Folkways Recordings, 1999, $14 CD). This

compact disc features a variety of musical

groups, recorded in three of the island's

four provinces.

Music of Indonesia—Music of Maluku:

Malassworda, Bunu and Kei, Vol. 19

(Smithsonian Folkways Recordings, 1999,

$14 CD). Musically, the vast province of

Maluken is one of the least known regions

of Indonesia. On this compact disc, music

from three islands—Halmahera, Buru and

Kei Beasi—is presented.

"Recordings," continued on Page 8
After reading many of the rejection letters, one wonders why on Earth he continued to go on and create Tupperware.

Wise also is a critical part of Tupper's empire. By going from door-to-door selling the plastic containers, she churned out record sales. In fact, her impressive sales nabbed her a key position in Tupper's Tupperware empire and resulted in her being the first woman ever to appear on the cover of Business Week magazine.

“Brownie Wise was quite a lady,” Clarke says. “During a time when women were basically homemakers. I was surprised to learn that Tupper actually respected her selling power and sense of business. She was quite persuasive and genuinely altruistic as a businesswoman. And, yes, Tupper did eventually become threatened by her prima donna behavior.”

When Tupper, an amateur inventor and designer, created Tupperware in 1942, he envisioned a total “Tupperization” of American home life. Women's lives, he believed, would be improved by his flexible, lightweight plastic containers.

By 1947, home magazines all over the country were hailing the Tupperware containers and praising their unique shapes and beautiful colors. Department stores and newspaper advertisements promoted Tupperware as the answer to the dreams of the modern homemaker. Tupperware changed the lives of millions of women who not only used these plastic containers but also found personal and economic freedom as Tupperware salespeople.

The Tupperware home parties, initiated by Wise, became the foundation of a multimillion-dollar business that proved as innovative as the containers themselves. Because of the overwhelming success of these parties, where women gathered in a hostess' home for lively product demonstrations and sales, Tupper pulled his entire product line from all department stores and retail outlets. In 1951, the Tupperware party became the company's exclusive form of distribution and sales.

The rest is history.

Tracing the fortunes of Tupper's polyethylene containers from early design to global distribution, Clarke explains how Tupperware tapped into potent commercial and social forces, becoming a prevailing symbol of late 20th-century consumer culture.

Much of the initial research for the book, Clarke says, was based on the oral histories of women in the United States and Great Britain, who were involved with Tupperware as hostesses lending their homes for parties or as dealers seeking a full or supplementary income. The women, she adds, frequently spoke of their involvement with Tupperware not just as a means of circumventing the limitations of their domestic and economic situations but as a positive and self-determining experience.

“Tupper’s inventions,” she writes, “were not the results of formal drawing-board exercises executed in a professional industrial design office, but of observations and understandings of domestic rural life in New England.”

—Jo Ann Webb

This image, circa 1946, showing a young couple preparing to serve guests from Tupperware containers, is on the cover of a new Smithsonian Institution Press book.