

SPECIAL

'CENTENNIAL'

EDITION



THE SMITHSONIAN TORCH

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Smithsonian Institution, Washington, D.C.

May 1976

OPENING SET FOR

11:30 A.M.

MAY 10, 1976

A & I READIES FOR '1876' OPENING

RESTORATION CAPS YEARS OF EFFORT

By Anna Reed

Set for reopening on May 10, the 96-year-old Arts and Industries Building, second oldest in the Smithsonian complex, has been partially restored to repeat sights and sounds of the Victorian era.

The building will appear much as it did in 1897 and the exhibits it contains will be a huffing, puffing recreation of the Philadelphia Centennial Exposition of 1876 all steamed up for the Bicentennial.

Visitors to "1876: A Centennial Exhibition" will see a structure decked out in all the ornate splendor that was the hallmark of the Victorian period, from the rich red-brick walls, picked out with bands of black and designs in blue and buff, through the tall, arched wooden doors to a magnificent centennial fountain which originally graced the Horticultural Hall at the Philadelphia Exposition.

While A & I was closed to the public only last August, the restoration work now so evident actually began more than 10 years ago with a small ad hoc group of Smithsonian planners.

Records are unclear but apparently the impetus for renovating the A & I for use as an exposition hall came from Frank A. Taylor, who, as Director of the U.S. National Museum, felt that the building, designed by the architectural firm of Cluss and Schulze, had historical importance because of its exposition-style architecture.

Another member of the group, Lloyd E. Herman, then assistant to Mr. Taylor, and now Director of the Renwick Gallery, recalled that in later discussions on the Bicentennial celebration, Mr. Taylor suggested that linking the museum and the A & I Building to the Philadelphia centennial might be an appropriate exhibition theme.

Under the encouragement of Secretary S. Dillon Ripley, an official committee, headed by Dr. Richard H. Howland, was appointed to oversee the renovations and improvements. Paul N. Perrot, Assistant Secretary for Museum Programs, was in charge of the overall restoration program. The noted architect Hugh Newell Jacobsen, was appointed project consultant.

Based upon aesthetic requirements as outlined by the Howland committee, concealment of all mechanical and electrical equipment which would serve the four exhibit halls and the rotunda was considered imperative.

For details of the building's general appearance, materials, photographs, drawings and files were provided by the Smithsonian Archives. Research extended to the National Archives and the Architect of the Capitol, and visits were made to other structures in Washington built by Cluss and Schulze during the same period.

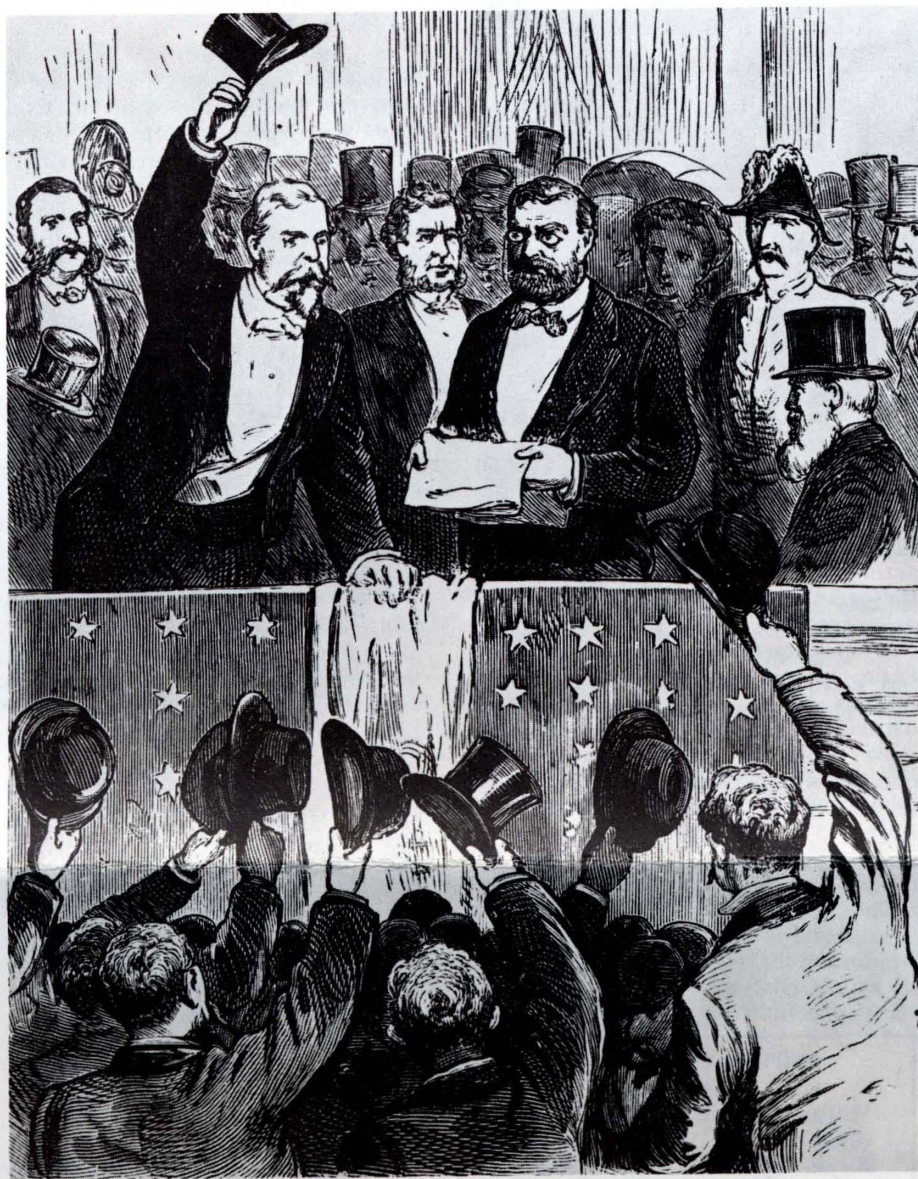
The challenge was to restore the building as much as possible architecturally to the way it appeared when it was finally completed, while continuing to house the exhibits on display and to provide additional office space required for the growing staff.

After the restoration program requirements were established, the planning and execution of the interior design and construction work began.

The task of developing these plans and administering the contracts was assigned to the Buildings Management Department, directed by Andrew F. Michaels.

He set up a small group headed by Michael Murphy, chief of engineering and construction, assisted by architect William L.

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PRESIDENT GRANT DECLARING THE EXHIBITION OPEN

OPENING CEREMONY RECALLS THE PAST

The official opening of "1876: A Centennial Exhibition" in the newly renovated Arts and Industries Building will recreate the opening of the original grand event in Philadelphia 100 years ago.

Secretary Ripley and special guests riding in President Grant's horse-drawn carriage, bands, marching military units, and a chorus will take part in the formalities beginning at 11:30 a.m. in front of the Jefferson Drive entrance of the A & I Building.

From "The Centennial Success Story," the preface to the A & I exhibition catalogue, John Maass, author of a recently published book on the Centennial, recounts the activities of the opening of the Centennial:

"The 10th of May, 1876, dawned with rain but when the gates opened at nine the sun broke through the clouds, like a bright omen after dark times. A grandstand for 4,000 distinguished personages had been erected in front of Memorial Hall. An orchestra played the anthems of 16 nations.

"At 10:30 the beat of drum corps and cornet bands heralded the arrival of the President, escorted by 4,000 national guardsmen, sailors, and marines. President and Mrs. Grant were joined on the grandstand by the Emperor Dom Pedro II of Brazil and the Empress Theresa, the first reigning monarchs to visit the United States.

"The Centennial Inauguration March, commissioned from Richard Wagner, was played. A Methodist bishop offered a

lengthy prayer. A Centennial Hymn, with words by John Greenleaf Whittier, was sung. John Welsh spoke for the Centennial Board of Finance. A Centennial Cantata was sung to strange lyrics by Sidney Lanier. General Hawley spoke for the Centennial Commission.

"Then it was the President's turn. Grant took his text out of a coat pocket and read a speech which was very brief by 19th century standards. It was also remarkably modest for an occasion that might have prompted bombast and chauvinism.

"The President finished speaking on the stroke of noon. At that instant the national banners were hoisted on all flagpoles, an organ and 800 singers intoned the Hallelujah Chorus from *The Messiah*, a chime of 13 large bells began to peal, and artillery fired a 100-gun salute from a nearby hill.

"Twenty-six parade marshals now mustered the 4,000 notables by 56 ranks of precedence. The cortege entered the Main Building, and as it passed the foreign sections their commissioners in resplendent uniforms joined the line of march. Proceeding to Machinery Hall, the President and Emperor mounted the platform of a towering steam engine. George H. Corliss of Providence, the designer of this giant, showed them how to turn two silver-plated cranks that started the engine which drove a system of gears, shafts, and belts that set in motion countless machines in the vast hall. At this sight and sound the crowd broke into a great cheer."

VAST EXHIBIT RECAPTURES 'VICTORIANA'

By Geraldine Sanderson

Thousands of feet of bunting overhead. Century-old machinery, lovingly restored to life, roaring, whining and thumping.

An orchestration, or giant mechanical organ, pumping out jaunty tunes of the period with such vigor they pulsate throughout the building.

A kaleidoscope of the sights and sounds that charmed, intrigued and baffled people 100 years ago.

All of this is "1876: A Centennial Exhibition," opening Monday, May 10, in the newly restored Arts and Industries Building.

Assembled by staff members of the Museum of History and Technology, the exhibit's 25,000 objects recreate the flavor and excitement that permeated the Philadelphia Centennial Exposition of 1876.

Much of what visitors will see is from the grand original, while others of the period represent objects that did not survive.

Museum curators spent two and a half years carefully researching the Centennial and traveled thousands of miles gathering objects, sometimes beating the wrecker's ball by scant hours. Their travels took them to museums, corporations, private collectors, and rural craftsmen.

One of the more dramatic recoveries was the lens and clockwork machinery from a lighthouse in Boston Harbor dismantled last summer with assistance from the U.S. Coast Guard.

Sometimes discoveries were made in the Smithsonian's own back yard. A 100-year old locomotive now in the East Hall stood for ten years in the Kennedy playground at 7th and O Streets, N.W. before it was acquired.

A Mills ice cream freezer, collected years ago by the Smithsonian, turned up quite by accident when staff members looking for something else saw it, checked the records and discovered it was the same type of freezer the Thomas Mills Company built and exhibited at the Centennial.

Cast iron gasholder columns being dismantled last year by the Baltimore Gas and Electric Company stand in the States section of the exhibit because the curator of the Division of Mechanical and Civil Engineering went out to look at them and realized the quality of workmanship in these fine examples of iron foundry work in Baltimore.

Complete restoration of machinery was done by the Technical Laboratory, Department of Science and Technology. Large pieces were restored at a shop set up at Silver Hill.

The exhibition includes giant totem poles from the Northwest Coast which were shown in Philadelphia in 1876. These were part of the 42 freight cars of materials that came to the Smithsonian, after the exposition closed, and formed the major part of the Smithsonian's early collections.

Every country and state represented in the original extravaganza was contacted, and many cooperated fully. Craftsmen were enlisted to fabricate objects that replicated those shown at Philadelphia and which no longer survived and which are in the style of the Centennial exhibits.

The 51-foot model of the naval sloop-of-war Antietam, exhibited at the Centennial Exposition, has had extensive new rigging and sails made. This was done in a special workshop in the Museum of History and Technology.

Ceramics, glass and silver in the exhibit came from museums and private lenders.

(Continued on page 8)

Robert A. Brooks, Under Secretary, Dies

Robert A. Brooks, Under Secretary of the Smithsonian Institution, died Sunday, April 11, at Georgetown University Hospital after a long illness.

Dr. Brooks had been associated with the Smithsonian since July, 1971, when he was appointed Deputy Under Secretary. He was named Assistant Secretary in 1972, and was appointed Under Secretary by the Institution's Board of Regents in 1973.

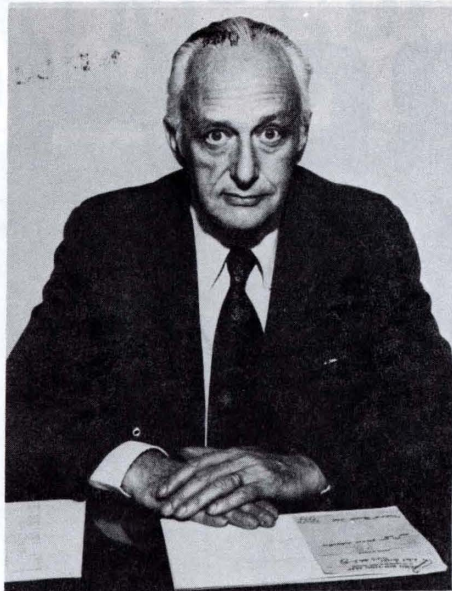
A memorial service was held April 15 at the St. Albans Church in Washington, D. C., at which Secretary Ripley delivered a eulogy.

Upon learning of Dr. Brooks' death, Secretary Ripley said:

"A recitation of 'Rab' Brooks' activities and interests is only a small part of the man. Here at the Smithsonian, which he loved so much and in which he had so many friends, he will be remembered for his wit, his understanding, his wisdom, his firm resolve that the Smithsonian be the best there is. These attributes of his will fly from every flag pole at the Smithsonian, just as his spirit will remain always with us."

Dr. Brooks was born in Calcutta, India, of American parents, on October 16, 1920, and spent his childhood in Scotland.

Dr. Brooks was graduated summa cum laude from Harvard University in 1940. He received his M.A. in 1941 and Ph.D. in 1949, both from Harvard, following service during World War II with the Army Air Forces in



ROBERT A. BROOKS

the Pacific Theatre of Operations, where he rose to the rank of Captain.

Trained as a classicist, Dr. Brooks began his career at Harvard in 1946 as a Junior Fellow, later teaching undergraduate and graduate courses in Greek and Latin languages and literature there.

Throughout his subsequent career, Dr.

Brooks maintained his interest in classical and humanistic studies, publishing notes, articles, translations, and verse; his poetry has appeared in *The New Yorker* and the *Atlantic Monthly*.

He entered the field of international management and educational consulting in 1951, when he joined the staff of Harbridge House, Inc. of Boston.

In 1965 he left Harbridge House to accept an appointment at the Pentagon as Assistant Secretary of the Army for Installations and Logistics. He returned to Harbridge House in 1969 as President, a position he held until he joined the Smithsonian.

In Cambridge, Mass., Dr. Brooks was a member of the Poet's Theatre. In 1956, he directed the Harvard University Classical Players in their performance of "Oedipus at Colonus" at the Fogg Museum theatre in Cambridge.

He was a member of the American Philological Association, the Harvard Club of Boston, Phi Beta Kappa, and the Cosmos Club, Washington, D.C. He resided in Cambridge, Mass., before moving to Washington, D.C.

The family has requested that contributions be made to the Smithsonian Institution, designated for the Robert A. Brooks Memorial Fund.

Farouk El-Baz Joins USIA Lecture Tour

Farouk El-Baz, research director of the Center for Earth and Planetary Studies at the National Air and Space Museum, recently joined three Apollo-Soyuz astronauts in a lecture tour in the Middle East.

Along with astronauts Thomas P. Stafford, Vance D. Brand and Donald K. Slayton, who piloted the Apollo spacecraft that docked with the Soviet Soyuz craft last July, Dr. El-Baz visited five Arab countries: Egypt, Saudi Arabia, United Arab Emirates, Qatar, and Kuwait.

The trip was sponsored by the U.S. Information Agency. The group lectured on significant results of the Apollo-Soyuz mission, desert photography from space, and NASA's new space shuttle program.

The group met with all heads of state of the countries visited, as well as ministers and other high ranking officials. Discussions were also held with presidents of universities, educators, directors of museums, and officials of scientific research organizations.

These discussions dealt with scientific aspects of the American space program in general and the study of deserts from Earth orbit in particular.

Twelve lectures were given during the two week tour. Dr. El-Baz lectured in Arabic and translated into the same language lectures given by the astronauts.

He reported that the lecture halls were always filled to capacity with knowledgeable and enthusiastic audiences. In the countries visited, the accomplishments of the U.S. space program are held in great esteem.

Students Enter CFA Internship Program

Cambridge, Mass.—A half-dozen area high school students will participate in the new Summer Intern Work/Learn Program at the Center For Astrophysics. The program is designed to introduce aspiring young scientists, especially women and members of minority groups, to the basic routine, daily discipline, frequent pleasure, and occasional excitement of scientific research.

The program grew out of last fall's symposium on science careers for women and has been developed by a committee consisting of Helen Beattie, Martha Liller, Ursula Marvin, Robert Reed, and Joanne Tondryk. Ms. Tondryk has also served as program coordinator.

The program responds directly to the growing concern of educators and employment specialists that pre-college students of demonstrated ability but limited socioeconomic resources need real-life image models and work experiences before they can consider or aspire to careers in science.

Six scientific groups, either as individuals or teams, have volunteered to direct the students in work/learn projects.

The student intern appointments will be for 8 weeks—July 5 to August 27—and each intern will receive a stipend of approximately \$800. The funds to support the program have been contributed jointly by Harvard and Smithsonian through the Director's Office.

A student may work with Bill and Martha Liller to study brightness variations in stellar

objects or quasars or with Christine and Bill Forman to study variation in the intensity behavior of galactic x-ray sources. Or, the student may assist Dave Latham in experiments to determine if Kodak photographic plates are useful in studying stellar spectra.

Another intern may work with Giovanni Fazio, assisting scientists and graduate students in the Optical and Infrared Astronomy Laboratory. Or, the intern may assist Mike Gaposchkin with scientific programming and data analysis tasks related to geophysics or help Peter Smith, Ed Reeves, and John Kohl in the atomic spectroscopy research program by studying data relating to studies of the solar atmosphere.

The recruitment of students has been conducted by Joanne Tondryk and Helen Beattie and the internships will be awarded on May 31. (Relatives of CFA employees are not eligible for the program.)

SMITHSONIAN TORCH MAY 1976

William O. Craig, who has served as editor of the TORCH since the summer of 1972, has left to take the post of publications director with the National Endowment for the Humanities. Gerald Lipson, Chief of the News Bureau of the Office of Public Affairs, will serve in the interim as TORCH editor; Kathryn Lindeman, Assistant.

Princeton Hails Henry; Albany Tests Re-Enacted

Princeton University recently paid tribute to Joseph Henry on the occasion of the publication of his papers, *The Princeton Years: November 1832-December 1835*, with the opening of an exhibition of his correspondence, apparatus and a lecture-demonstration of some of his experiments using the original equipment.

Joseph Henry, the first Secretary of the Smithsonian, was a professor of natural philosophy at the Albany Academy for 13 years. During that time his discoveries included the self-induction of electric current, the oscillatory nature of electric discharges, the electric relay and the electromagnetic telegraph.

During the Princeton tribute, Professor Allen Shenstone, a former chairman of Princeton's physics department conducted the re-enactment of Henry's experiments. Professor Shenstone demonstrated Henry's experiments in self-induction with a single dry cell battery, a small but powerful electromagnet of Henry's design, and 10 students who held hands to form a closed circuit. When the circuit was broken, a current was induced that caused the students to jump. This experiment was repeated by Shenstone using 20 persons including the Dean of the Engineering School, who did not move when the circuit was broken the second time, although a student holding his hand was jolted from her seat.

Henry's famous "tea" bell experiment was also re-enacted. He used this procedure to alert his wife when he was leaving the laboratory so that she could start boiling water for tea. He strung a copper wire, grounded in a nearby well from a dry cell in a building located across campus. The wire was grounded in a well in front of another building and fed into the parlor of Henry's home. Energized by an electric current, a long-coil intensity magnet caused a magnetized steel bar to strike a bell, signaling Mrs. Henry to start the tea.

Professor Shenstone rang a bell in similar fashion the length of a 25-foot demonstration table. He explained that this experiment was important because it proved that an electrical impulse could travel a long distance in relay without weakening.

In addition to the demonstrations, Professor Shenstone talked about the numerous accomplishments of Joseph Henry. Henry was the first to recognize that the aurora borealis is not a localized but a world wide phenomenon associated with the earth's magnetic field.

In 1829 when Henry began his research at Albany, magnetism and electricity were considered distinct forces. Michael Faraday and Henry each were seeking to generate an electric current from magnetic effects. Henry's research greatly increased the power of the horseshoe electromagnet, which was invented by William Sturgeon in 1820, by winding many more coils of wire around the iron core than had been done previously.

According to Professor Shenstone, Henry had almost discovered electromagnetic induction in 1831. In the midst of building apparatus to demonstrate the effect, his laboratory was converted for classroom use. When his experiments began the next spring, Henry learned that Faraday had independently discovered induction and had already published his findings. Because Henry had not seen the British scientific journal that described Faraday's method, he published his own experiment proving induction. He included in the article his discovery of self-induction—the generation of a current, visible as a spark, when a closed circuit is broken. His precedence in this discovery is unquestioned.

Henry also introduced insulated wire by wrapping silk or cotton thread around the wire instead of the commonly-used sealing wax. His largest electromagnet, could lift 3,500 pounds. Magnets such as these soon revolutionized the iron-ore extraction industry.

While Secretary of the Smithsonian, Henry organized a volunteer weather service that eventually became the U.S. Weather Bureau.

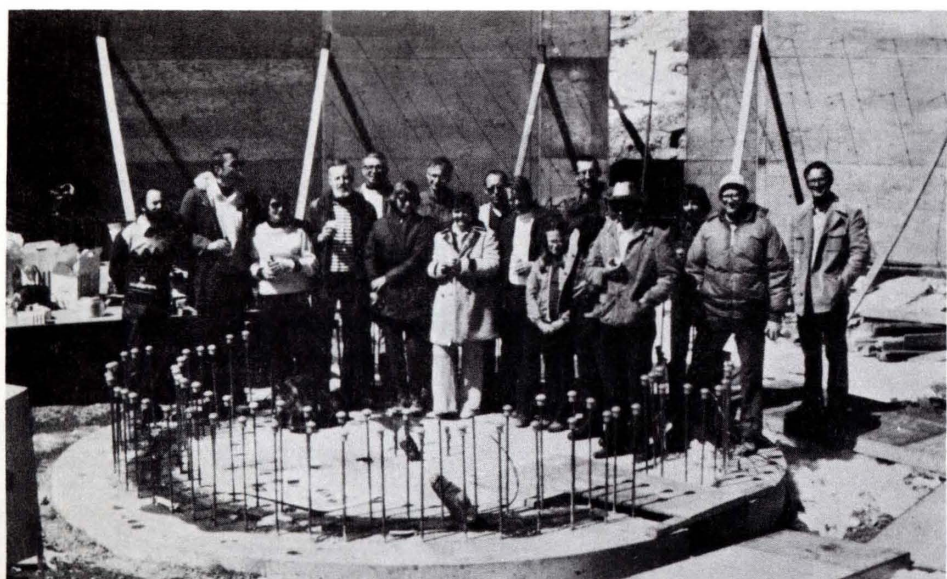


PRESENTATION TO HONOR RUSK APPOINTMENT

Senator Herman Talmadge of Georgia (right) presented a glass sculpture on April 5 to the Woodrow Wilson International Center for Scholars in honor of the appointment of former Secretary of State Dean Rusk to the Center's Board of Trustees. Presented on behalf of the state of Georgia, the sculpture was done by Atlanta artist Hans Godo Frabel and represents world peace. Taking part in the ceremony were (from left) Mr. Rusk; Representatives Robert G.

Stephens, Jr. and Phillip M. Landrum, of Georgia; Rogers Wade, Administrative Assistant to Senator Talmadge; Representative Williamson S. Stuckey, Jr., of Georgia, and Secretary Ripley. Other WWICS Board members attending were Secretary of State Henry Kissinger; Secretary of Health, Education, and Welfare David Mathews; Solicitor-General Robert Bork, and Chairman of the Center's Board, William J. Baroudy.

Capsule for Tricentennial Buried at Mt. Hopkins Site



Ceremonies were held at the 8,550-foot level of Mt. Hopkins March 6, when Smithsonian and University of Arizona personnel gathered around the foundation of the Multiple Mirror Telescope after placing a time capsule filled with MMT memorabilia in the concrete. Pictured are Dr. Trevor Weekes, Resident Director of the Mt. Hopkins Observatory (first on left); Dr. Nathaniel Carleton, Associate Director for Optical and Infrared Astronomy and Smithsonian Project Scientist for the MMT (fourth from left); John Gregory, Assistant Director of the Smithsonian Astrophysical Observatory (fifth from left); Dr. William Hoffmann, University of Arizona Project Scientist for the MMT (seventh from left); and Dr. Peter Strittmatter, Director of the University's Steward Observatory (tenth from left).

At the peak of Mt. Hopkins, Ariz., March 6, a time capsule containing a commemorative scroll, official documents, and assorted memorabilia associated with the Multiple Mirror Telescope, was placed in the concrete foundation of the new telescope facility.

The informal ceremonies, attended by officials from both the University of Arizona and the Smithsonian Astrophysical Observatory, marked the latest step toward the completion of the joint project to build the world's third largest optical telescope. The site at the 8,550-foot summit of Mt. Hopkins was leveled and prepared for the foundation late last year, and the pouring of concrete began in mid-February.

The location of the time capsule was marked with a small plaque so historians, in the Tricentennial Year of 2076 may retrieve the materials buried beneath the historic telescope.

And what will they find encapsulated in the concrete? A variety of official documents, including transcripts of the testimony before the U.S. House and Senate appropriations subcommittees; copies of *The Centerline* and the two daily Tucson newspapers; a ball bearing from the MMT's azimuth system; an integrated circuit power supply; packets of Saguaro Cactus and Century Plant seeds; a video tape of a pre-ceremony television news interview; and a "Tucson 200" Bicentennial pin.

The special parchment scroll, handlettered by Steve Kraft of the Smithsonian Press, reads:

"WITNESSETH: In this, the Bicentennial year of the founding of the United States of America, representatives of the Smithsonian Institution Astrophysical Observatory and the University of Arizona and their invited guests gathered at the summit of Mount Hopkins, Arizona, to mark the beginning of construction of the building that would house the Multiple Mirror Telescope.

"The Multiple Mirror Telescope, a joint project of the Observatory and University, is an instrument of radical design, combining six individual mirrors in a computer-controlled array to produce the light-gathering capability of a single 4.5-meter telescope disk. This instrument, intended primarily for research in infrared and optical astronomy, promises to be the first in a series

of large telescopes utilizing this revolutionary concept.

"To those members of future generations who may discover this message, we, the designers and builders of this facility, hope that our creation has contributed in some significant way to your better understanding and appreciation of those celestial phenomena which both inspired this endeavor and underlie all human existence."

NMHT Specialist Discusses Abilities of Handicapped

The following is the second article in a series on handicapped persons written by Joe Buckley, Special Education Specialist at the National Museum of History and Technology.

One of the questions one asks himself pertaining to the blind is, "Do they possess any special abilities?"

The answer is, yes, indeed they do, and there is reason to believe that in the probably much-practiced task of sound localization, blind persons are somewhat better than sighted persons.

One special ability a blind person develops is that of "obstacle perception," or "facial vision," brought out by the ability, for example, to stop walking just before coming to a wall. Another question posed by many people has been, "How does a blind person get around?" There are basically two ways a blind individual accomplishes this task. First, they must establish a position and relationship to other objects in the environment, which is called ORIENTATION, and the second refers to actual locomotion from a starting point to a desired location in another part of the environment, which is called MOBILITY. A sighted person takes for granted that he or she can get around, and the choice of when, where, and how are theirs alone to make. Blind persons, on the other hand, can make this same decision only if they are able to do it by themselves, and after they have mastered all the necessary skills and techniques involved in traveling.

There are two types of blindness we should become familiar with. Those born blind (congenital blindness), and those who have lost their sight sometime during their lifetime (adventitious blindness). The distinction between both is that with congenital blindness there is a lack of independent mobility. In adventitious blindness, there is a traumatic experience, and according to the American Federation for the Blind in New York City, it can have the most devastating and overwhelming effects on an individual.

Next month, we will be dealing with the sighted person's role in aiding the blind.

NCFA Notes

By Margery Byers



Three of our interns were very much involved in our current "Behind the Scenes at NCFA" exhibition. It was a unique opportunity to participate in a project from start to finish and it has given each of them—as well as our visitors—a fascinating look at how a museum functions.

For the interns, there were some surprises. They were astonished to learn that most exhibitions are scheduled two years or more in advance, and were impressed by the number of steps involved in each show and by the coordination that must take place.

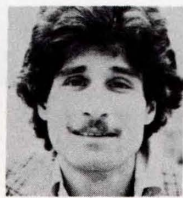
The work of each department very much depends on the operation of all the others, with cooperation not only desirable but totally necessary.

Trinkett Clark, at 24, is the youngest of this trio of art history majors, and her internship has been part of her graduate work at George Washington University where she will receive her M.A. this month.



T. Clark

Neil Printz, 26, and Ildiko DeAngelis, 28, came to NCFA for their year's internship after each had earned his M.A.—Neil at the University of Michigan and Ildiko at the State University of New York in Binghamton.



N. Printz

For this project, all were under the direction of Dr. Peter Bermingham, NCFA's Curator of Education and organizer of the exhibition, who explained the purpose of the show, guided them on research and photography (and took some photographs himself), and worked with Neil and Ildiko in writing the final text panels.



I. DeAngelis

Trinkett was given the assignment of interviewing staff members for the background material needed for the exhibition.

"Peter gave me a rundown of the people," she explains, "but those he said would be the hardest to talk to were the easiest. Some were

difficult because they felt there was no way to describe their offices. I was amazed to find everyone so young and friendly because I had an image of museum people as being very elderly and staid."

Ildiko's assignment was to take many of the photographs, and that was a totally new experience for her.

"My husband bought a camera in Hong Kong last year," she explained, "but this was my first opportunity to use it and learn how it works."

Later, she shared her knowledge with Neil—who had never taken a photograph—and both have their share of recollections.

"Some staff people were extremely camera-shy," Neil said, "but some loved it. One blushed and looked at the ground, while another gave us a running feedback of what he was doing."

Ildiko was on hand at 9:30 one morning to record the Avanti car being moved out of the Renwick after our Raymond Loewy exhibition.

Suddenly realizing that her lightmeter was malfunctioning, she raced to a camera shop, "pushed people aside," and had the repair work done in half an hour.

She needn't have rushed: the Avanti move took all day. There were other frustrations. Neil was to photograph the moving of David Smith's "Cubi XXVI" into storage after the sculpture show, but "I ran up three minutes late and couldn't find it."

Ildiko recalls a "heartbreaker" when she was sure she had a marvelous picture of Duane Hanson's "Hard Hat, Construction Worker" braced in a crate—but the camera shop lost the entire roll of film.

Neil particularly enjoyed being on hand when things were happening but found it difficult to get people "in action" and, like many a photographer, complains that "the best things happened before the camera was focused."

All helped install "their" show, and seeing the culmination of their months of work gave them added satisfaction. The tenures of all three are soon over—Trinkett this month, Ildiko and Neil at the end of July—and now each will look for a permanent position in the museum field. They found their stay with us both memorable and rewarding and Ildiko voices a well-earned accolade for Peter Bermingham who not only guided them but gave them responsibilities for the exhibition: "He was amusing and helpful and supportive."

More Donations Needed To Meet SI Blood Goal

Smithsonian employees have met 52 percent of this year's blood donation goal of 325 pints according to the semi-annual report of blood donations for FY 76. There are still 157 pints to be obtained to meet the SI goal.

The importance of the blood program and the benefits that the community receives from the efforts in meeting the assigned goal were emphasized by employee relations officer, Dorothy R. Lewis.

"We not only benefit the community by

donating, but also serve ourselves and families by assuring protection in case of our own needs," Mrs. Lewis said. "Experience has shown that employees want to participate and that they need only to be reminded of the need and given the opportunity to donate."

Staff members who have not donated blood and wish to do so may call extension 5226 for more information.



SLAVE DRUM UNVEILED—Jonathan King, Assistant Keeper of North American Collections in the British Museum, and staff members from the Smithsonian's National Museum of History and Technology open the crate housing a rare African-style drum made in America by an unknown slave in the colonial period. This extremely rare piece is an Akan-type drum made of American cedar and deerskin. It was collected in Virginia about 1740 for Sir Hans Sloane, the founder of the British Museum. Since then it has been part of the British Museum's collections, and only now is it being lent to the History and Technology Museum as a contribution to its major Bicentennial exhibition "A Nation of Nations." The drum was flown in especially for inclusion in the exhibition. It has been exhibited in Britain almost continuously for 200 years.

New TORCH Feature Starts

As a special feature for the Bicentennial year, the Office of Public Affairs is reprinting in each issue of the TORCH, starting with this issue on pages 4 and 5, the current Smithsonian Calendar of Events. Produced each month by Lilas Wiltshire of the Public Affairs staff, the calendar has been distributed by mail in the past to members of the Smithsonian Associates and others in the community interested in events at the Institution. This free service will continue.

Puppet Show Set for A & I Opening

An adaptation of a popular puppet show that played the Philadelphia Centennial 100 years ago will return to the stage when the Arts & Industries Building reopens with "1876: A Centennial Exhibition."

The puppet theater will feature "The Grand Centennial Puppet Show," presented by the Nicolo Marionettes. Put together by troupe director Nicholas Coppola, the show is adapted from one presented at the Philadelphia Centennial by the Middleton Marionettes.

Starting Wednesday, May 12, the Nicolo Marionettes will perform in the Arts & Industries puppet theater Wednesday through Sunday until Sept. 6, with three shows daily at 10:30 a.m., 1 p.m. and 2:30 p.m.

Coppola, working from programs and handbills of the Middleton group, plus extensive historical references, has reduced the original show's running time of two hours to about 50 minutes, while still retaining the basic three-part format.

Gullager Show Slated for NPG

A new exhibition entitled "Christian Gullager: Portrait Painter to Federal America" opens May 12 at the National Portrait Gallery and runs until September 5.

The Danish-born artist whose works are exhibited emigrated to America in the mid-1780s. Here he painted portraits of wealthy and distinguished Americans including George Washington.

About 30 portraits will be shown, spanning Gullager's career from 1782 (in Denmark) to about 1808 (in America), which is as late as his work presently can be traced. In 1789, the *Boston Centinel* described Gullager as one of "the two best portrait painters of this metropolis."

In addition to portraiture, Gullager was also noted for decorative works often patriotic in nature. His son Charles later wrote:

"His representation of the American Eagle was so spirited and beautiful that he was characterized among painters as the 'Father of the Eagle.' " One of these eagles will be included in the exhibition—the standard of the First City Troop of Philadelphia, painted in 1798.

The exhibition was organized by the Director of the National Portrait Gallery, Marvin Sadik, who visited Denmark to do research on Gullager's early career and the origins of his style.

A catalogue written by Mr. Sadik and designed by the artist Leonard Baskin is available.



VISITORS TO AMERICA—Alexis de Tocqueville, an oil on canvas by Theodore Chasseriau from the Musée National du Château de Versailles, is one of the foreign visitors represented in "Abroad in America: Visitors to the New Nation, 1776-1914" which opened April 9 at the National Portrait Gallery. As the Gallery's third Bicentennial exhibition, "Abroad in America" presents America as observed by foreign visitors from the time of the Revolution to World War I. The exhibition, continuing through November 13, includes portraits, landscapes, maps, diaries, photographs, posters and books.



May at the Smith

- 1** MUSIC FROM MARLBORO. All-string program performed by artists from the Marlboro Music Festival — Jaime Laredo and Lucy Chapman, violins; Heiichiro Ohyama and Daniel Phillips, violas; and Sharon Robinson, cello. The program will include works by Mendelssohn, Ravel and Beethoven. Final program in the 1975-76 Marlboro series. 5:30 p.m. Baird Auditorium, Natural History Building. \$5.50 general, \$4 students and senior citizens, \$5 Resident Associates. For reservations call 381-5395. Sponsored by the Division of Performing Arts.

EXHIBITION: *Ethel Floyd: Birder and Photographer*. Color photographic portraits of birds taken while being banded for a migratory study. Museum of Natural History. Through June 30.

CONCERT: *Contemporary American Music*, performed by the United States Army Brass Quintet. Program will include works by Randel Croley, Gunther Schuller, Michael Buckley, Verne Reynolds, Harry Lockwood, and the premiere performance of *Five Pieces for Brass Quintet* by Thomas Beveridge. 2 p.m. The Renwick Gallery. Scheduled in conjunction with the current exhibition *Signs of Life: Symbols in the American City*. FREE.

- 1** ABOUT FACES: *Life Mask Making*. An art instructor makes a face mask and discusses the technique of the art. 1:30 to 3:30 p.m. both Saturday and Sunday. National Portrait Gallery. Second in a series that will continue on May 8 and 15. FREE.

*RESIDENT ASSOCIATES PROGRAM

*Sponsored by the Resident Associate Program of the Smithsonian. Discounts are available for members. For attendance or other information call 381-5157. Unless otherwise indicated, tickets should be purchased in advance, and will be sold at the door only if available.

- 4** NMHT TUESDAY FILMS: *Last Wheel Works*; and *Sawyer and His Mill*. 1 p.m. Carmichael Auditorium, History and Technology Building. FREE.

CONCERT: Performed by the Port Authority Navy Band. 10 a.m. Anacostia Neighborhood Museum. FREE.

- 5** FREE FILM THEATRE: *The Shadow Catcher: Edward S. Curtis and the North American Indian*. The story of Curtis and his project of capturing on film Indian thought and custom. Included are the Kwakiutl, Navajo and Hopi and original footage of Northwest Coast masked dancers. 12:30 p.m. Carmichael Auditorium, History and Technology Building. FREE.

FILM: *Hitch*. Centered around a fatherless family that arrives in Harlem from a small southern town, the film explores black life in Harlem as seen and felt from within. 10 a.m. and 1:15 p.m. Anacostia Neighborhood Museum. FREE.

- 6** FREE FILM THEATRE: *The Shadow Catcher: Edward S. Curtis and the North American Indian*. THUR Repeat of May 5 program. FREE.

ILLUSTRATED LECTURE: *Japanese Bicentennial Gift to the United States*. Dr. John Creech, Director, National Arboretum, discusses the collection of rare Bonsai and the Garden being constructed to house the plants. 8 p.m. Freer Gallery of Art. Sponsored by the Japan-America Society. FREE.

- 7** NATURAL HISTORY FILMS: *Turtle Island* — the precarious life of the green turtle in the Indian Ocean; and *The Living Forest* — reconstruction of the evolution of a forest. 12 noon. Baird Auditorium, Natural History Building. FREE.

- 8** ABOUT FACES: *Made Up Faces*. Two professional actors demonstrate and discuss the art of theatrical makeup. 1:30 to 3:30 p.m. National Portrait Gallery. See also May 15. FREE.

- 8** BOOMERANG LECTURE/WORKSHOP: Benjamin Ruhe discusses the history and uses of the boomerang and teaches the skills of boomerang carving and throwing. Boomerangs are furnished. Participants must provide their own working tools. 1:30-4 p.m. Baird Auditorium, Natural History Building. \$7.* (FREE Competition May 15.)

- 10** REOPENING OF ARTS AND INDUSTRIES BUILDING. 1876: A Centennial Exhibition. MON.

ILLUSTRATED LECTURE: *Peruvian Archaeology* (Theocratic Foundations of Pre-Columbian Urbanism on the Peruvian North Coast). Speaker: Professor Richard W. Keatinge, Department of Anthropology, Columbia University. 1976 annual lecture co-sponsored by the Smithsonian Institution and the Archaeological Institute of America. 8 p.m. Baird Auditorium, Natural History Building. FREE.

- 11** NMHT FILMS: *Silversmith of Williamsburg*. 1 p.m. Carmichael Auditorium, History and Technology Building. FREE.

CREATIVE SCREEN: *Allegro Ma Troppo* — absurd; disturbing and aesthetically moving film on city life; N.Y., N.Y. — a fantasy interpretation of a day in New York; *Fat Feet* — humorous, exotic documentary of city life. 11 a.m., 12 noon, 1 p.m. The Renwick Gallery. Shown in conjunction with the current exhibition *Signs of Life: Symbols in the American City*. FREE.

- 12** FREE FILM THEATRE: *North with the Spring*. The passage of spring from the Everglades to the Canadian Arctic viewed by naturalist Edwin Way Teale. 12:30 p.m. Carmichael Auditorium, History and Technology Building. FREE.

EXHIBITION: *Christian Gullager: Portrait Painter to Federal America*. About thirty portraits spanning Gullager's career from 1782 (in Denmark) to about 1808 (in America). Some of the most vivid and life-like portraits in the history of American art, his works represent many wealthy and distinguished Americans. Also noted for decorative works, Gullager's representation of the American Eagle used as the standard of the First City Troop of Philadelphia will be included. National Portrait Gallery, through September 5.

LUNCHBOX FORUM: *Mars: The Middle Planet*. Speaker: Herbert Frey, Research Assistant, Geophysics Branch, Goddard Space Flight Center. The geophysical characteristics shared by Mars, earth and the moon, the distinct surface features of Mars, and its past and present climate. 12 noon. Freer Gallery of Art. Sponsored by the National Air and Space Museum. FREE.

- 13** ILLUSTRATED LECTURE: *Bicentennial Architecture: The Victorians*. Hugh Newell Jacobsen, Fellow, AIA will discuss the restoration of the Smithsonian's Arts and Industries Building, the tastes of the Victorian era and the choices made in restoring the building. Scheduled to celebrate the reopening of the A & I Building and to commemorate National Historic Preservation Week. 8 p.m. Carmichael Auditorium, History and Technology Building. \$5.*

FREE FILM THEATRE: *North with the Spring*. Repeat of May 12 program.

ILLUSTRATED LECTURE: *Giants of the Galapagos*. Craig MacFarland, Director of the Darwin Research Station in the Galapagos, discusses his recent research on the giant tortoises — the curious beasts that stimulated Darwin's theory of evolution. 8 p.m. Baird Auditorium, Natural History Building. \$5.*

EXHIBITION: *Arne Jacobsen, Danish Architect and Designer*. The mastery of Jacobsen in both architecture and industrial design is represented with a selection of more than 100 of his product designs and numerous photographic panels illustrating his architectural work. Textiles, flatware, lamps, kitchen and bathroom fittings, clocks, and furniture, including his famous Egg, Swan and Ant chairs, will be displayed. The Renwick Gallery. Through August 1.

- 14** NATURAL HISTORY LECTURE: *Giant Tortoises of the Galapagos*. Speaker: Craig MacFarland, Director, Darwin Station. 12 noon. Baird Auditorium, Natural History Building. FREE.

- 15** BOOMERANGS! *Third Annual Tournament*. Competition in both *Novice* and *Advanced* categories, 8 years old and up. Entrants must provide their own boomerangs. Competition, Prizes, Demonstrations and Presentation Ceremony. Registration begins at 3 p.m. Activities at 4 p.m. (Wind date May 16 — call 381-5157 for postponement information.) Polo Field, National Mall. For complete information call 381-6725. Organized by the Smithsonian Resident Associate Program. FREE.

- 15** ABOUT FACES: *Portrait Painting*. A portrait artist will paint while discussing this specialized art form. Final program in the series sponsored by the NPG. 1:30 to 3:30 p.m. National Portrait Gallery. FREE.

sonian Institution

16 CONCERT: *Jean Hakes*, soprano, *James Weaver*, harpsichord and forte-piano, and *John Hsu*, viola da gamba, will perform works by Marais, Bach, Handel and Schubert. 8:30 p.m. Hall of Musical Instruments, History and Technology Building. \$4 general, \$2 students and senior citizens, \$3.50 Resident Associates. For reservations call 381-5395.

17 AUDUBON LECTURE: *Riding the Thermals with Cranes in Iran, Siberia and Alaska*. Speaker: George W. Archibald, Director, International Crane Foundation. Many species of wild cranes are discussed and shown through slides. 8 p.m. Baird Auditorium, National History Building. \$3.* Co-sponsored by the Audubon Naturalist Society.

18 NMHT TUESDAY FILM: *Gunsmith of Williamsburg*. 1 p.m. Carmichael Auditorium, History and Technology Building. FREE.

19 FREE FILM THEATRE: *Rivers of Sand* — documentary on the Hamar people of Southwestern Ethiopia, their daily life and their dominant characteristic — male supremacy. 12:30 p.m. Carmichael Auditorium, History and Technology Building. FREE.

FILM: *Tribute to Malcolm X*. 10 a.m. and 1:15 p.m. Special showings may also be arranged for groups. Call 381-6691 for information. Anacostia Neighborhood Museum. FREE.

DISCUSSION: *Malcolm X: Nationalism to Pan-Africanism*. Speakers to be announced. 7 p.m. Anacostia Neighborhood Museum. FREE.

20 ILLUSTRATED LECTURE: *Carrousels: Their Charm and Artistry*. Speaker Barbara Charles will discuss the history of carrousels, the carved animals and the craftsmen creators, and the era of their popularization. 6:30 p.m. Carmichael Auditorium, History and Technology Building. \$3.*

LECTURE: *The Philistines*. The origins and history of the lost civilization of the Philistines is traced. Speaker: Trude Dothan, Professor of Archeology, Hebrew University, Jerusalem. 8 p.m. Baird Auditorium, Natural History Building. \$5.*

FREE FILM THEATRE: *Rivers of Sand*. Repeat of May 19 program.

EXHIBITION: *The Golden Door: Artist-Immigrants of America, 1876-1976*. Over 200 works representing 67 foreign-born painters, sculptors, architects and photographers, including de Kooning; Marisol; Shahn, Duchamp and Saarinen. The role of the artist-immigrant in American art of the past century is assessed and the impact of America on the foreign-born artist. The show is arranged chronologically by dates of immigration and 24 foreign countries are represented. Hirshhorn Museum and Sculpture Garden, through October 20. A Bicentennial Exhibition.

21 NATURAL HISTORY ILLUSTRATED LECTURE: *Holes in Bones and Other Curious Things — The Biology of Ancient Disease*. Speaker: Dr. Donald Ortner, Curator, Department of Anthropology. 12 noon. Baird Auditorium, Natural History Building. FREE.

22 CHILDREN'S DRAMA: *Funkystilskin*. A modern version of the classic tale of Rumpelstiltskin, presented through music, dance and mime by the Archaeus Productions. 2 p.m. Baird Auditorium, Natural History Building. \$2.50*

AMERICAN KALEIDOSCOPE '76: The seventh annual day for families. Keyed to the NCA Bicentennial exhibition *America As Art*, activities will include tours of all eight sections of the exhibition and films on both art and American art history. Guides will be dressed in costumes based on works in the show — pioneers, country gentlemen and construction workers. Children may make banners, help paint a mural, have their faces made up as clowns or Indians and create papier maché masks. Visitors may also contribute to the production of a film by drawing directly on celluloid. Anyone wishing to learn silkscreening should bring a T-shirt to decorate. All other supplies will be provided. 10 a.m. to 4 p.m. National Collection of Fine Arts. FREE.

24 EXHIBITION: *Solar Energy*. Solar heating and cooling of residential buildings, emerging solar technologies and energy conservation design will be described with working equipment to demonstrate. An open air show sponsored jointly by the Energy Research and Development Agency, Federal Energy Administration, Housing and Urban Development, and Concern, Inc. Third Street and Jefferson Drive, S.W. Through October 31. 9 a.m. to 9 p.m. daily.

CONCERT: *The Spirit of 1876*. Presented by the Division of Musical Instruments using period instruments from the Smithsonian collections. Scheduled in conjunction with the recently opened exhibition *1876: A Centennial Exhibition*. 8:30 p.m. Arts and Industries Building. FREE.

25 NMHT TUESDAY FILM: *The Festival of American Folklife*. 1 p.m. Carmichael Auditorium, History and Technology Building. FREE.

CREATIVE SCREEN: *Allegro Ma Troppo*; *N.Y., N.Y.*; *Fat Feet*. Repeat of May 11 program. FREE.

26 SEMINAR: *Artist-Immigrants of America: 1876-1976*. Day-long seminar featuring distinguished artists represented in the current Hirshhorn Museum exhibition. Using slides the artists will discuss their immigration, the artistic ideas brought with them and the influence of the American experience on their art. Speakers will include Abram Lassaw, 10 a.m.; Friedel Dzubas, 10:45 a.m.; Patrick Ireland, 1:30 p.m.; Christo, 2:15 p.m. Discussion among the artists and refreshments follow. Moderators: Jo Ann Lewis, *Washingtonian* magazine; and Cynthia McCabe, Exhibition Curator, National Collection of Fine Arts. \$25.*

26 FREE FILM THEATRE: *Dead Birds*. Documentary of the Dani people of the western New Guinea mountains, showing their lifestyle of war, waiting, joy and boredom. 12:30 p.m. Carmichael Auditorium, History and Technology Building. FREE.

HIRSHHORN CAFE

A selection of picnic box lunches are now available in the fountain court, Hirshhorn Museum and Sculpture Garden. Seven days a week, weather permitting. Beverages are available. \$2.25.

27 ILLUSTRATED LECTURE: *The Full Moon of Buddha*. Speaker: Suvira Kapur, Buddha's life and thought, emphasizing their distinguishing qualities — charity, simplicity and equality. A film of Buddhist places of pilgrimage will be shown. 8 p.m. Baird Auditorium, Natural History Building. \$4.*

FREE FILM THEATRE: *Dead Birds*. Repeat of May 26 program.

28 NATURAL HISTORY LECTURE: *Zuni Pottery: The Restoration of a 100-Year-Old Collection*. Speakers: Margaret Ann Hardin, Smithsonian Fellow and instructor, Loyola University, Chicago; Jane Norman and Pamela Wintle, museum technicians, Smithsonian Anthropology Conservation Lab. 12 noon. Ecology Theatre, Natural History Building. Seating is limited. FREE.

EXHIBITION: *1876: American Art of the Centennial*. Thirty-five paintings and sculptures, most of which were shown in the American section of the Philadelphia Centennial of 1876. Paintings range from landscape to portraiture, genre painting and still-life. National Collection of Fine Arts, through November 28.

Radio Smithsonian

Radio Smithsonian, a program of music and conversation growing out of the Institution's many activities, is broadcast every Sunday on WGMS-AM (570) and FM (103.56) from 9-9:30 p.m. The program schedule for May:

2nd — *Surprises of Nature*. S. Dillon Ripley, Secretary of the Smithsonian, talks with correspondent Edward P. Morgan about the unique habits of some birds and mammals; *Pushing Back the Origins of Man*. Richard Leakey and Dr. Donald Johanson describe new evidence that early man may have evolved 3.5 million years ago.

9th — *Saving the Bengal Tiger*. Part II of a conversation between Smithsonian Secretary S. Dillon Ripley and correspondent Edward P. Morgan focuses on a Smithsonian study of this endangered big cat; *The Character of Caricature*. American caricaturist David Levine talks about his work and some of his famous subjects.

16th — *The New Ethnic Consciousness*, explored by Stephen Birmingham, noted author of *Our Crowd* and *The Grandees*. *The Drift of Evolution*. Smithsonian curator Erle Kauffman discusses the theory of evolution in light of continental drift and plate tectonics.

23rd — *1876*. A journey to the grand and dazzling Philadelphia Centennial Exposition, as re-created in the Smithsonian's Arts and Industries Building.

30th — *Launching the Rocket Age*. A look at Robert Goddard, who built the world's first liquid-propellant rocket 50 years ago. Guest is Frederick C. Durant III, National Air and Space Museum. *Ex-Slaves I Have Known*, with Ophelia Egypt, Washington author and retired social worker.

Spider Sandwich Is High-Protein Snack

For a really different high-protein snack with a pleasing nutty flavor, two Smithsonian scientists suggest trying the giant wood spider of Papua, New Guinea.

Entomologists Michael and Barbara Robinson, of the Smithsonian Tropical Research Institute, sampled several fresh-roasted spiders packed with eggs during a recent research project and found the flavor good and texture in no way repugnant.

"They taste like peanut butter without the objectionable consistency," said Mr. Robinson, who with his wife and coworker, has studied this tropical spider in coffee plantations at Wau in Papua, New Guinea.

The Robinsons learned the giant wood spider (*Nephila maculata*) also is eaten in Thailand. When consumed raw with salt added the flavor is said to be similar to a mixture of lettuce and uncooked potato.

"Adult females of this species must be a good source of palatable protein in an area where protein sources are scarce," they said.

The arachnologists—entomologists who study spiders, mites and scorpions—observed that New Guineans from several areas of the Central Highlands collect live females full of eggs which at certain times are found in great abundance.

The spiders are placed in the hollow of a bamboo stem of three to four inches diameter and 18 inches long. A piece of folded banana leaf is used to stop up one end of the bamboo during collection.

When enough fat females are obtained, the bamboo stem is placed in the embers of a fire and left for 10 to 15 minutes until the green bamboo is blackened. The spider skins are split during the roasting process.

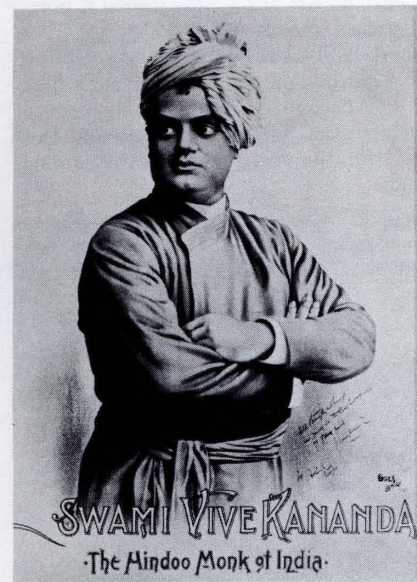
Since pregnant females weigh only three grams or so, 30 spiders are required to produce one ounce of food, about 40 dozen to the pound. The Robinsons found the average egg sac or cocoon to contain an average of 2,500 eggs.

The body of the spider measures about one and one-half inches and its legs are about three inches long. The body and legs are black with bright yellow areas on the underside of the thighs.

The Robinsons have been investigating the natural history, ecology and behavior of several species of tropical spiders in Panama and New Guinea since 1970.

Their recent findings are reported in an article, "The Ecology and Behavior of *Nephila maculata*: A Supplement" published as number 218 in the series *Smithsonian Contributions to Zoology*.

The U.S. Department of Agriculture says its entomologists are conducting research on the possibility of raising insects as a possible source of food, but so far principally as food for poultry.



"ABROAD IN AMERICA"—Swami Vivekananda, a lithographic poster by Goes Lithograph Company, courtesy of the Vedanta Society of Northern California, is a part of the National Portrait Gallery's exhibition "Abroad in America: Visitors to the New Nation, 1776-1914." Visitors came to America from Europe, Asia, Africa and Latin America and their observations were both complimentary and critical. The foreigners featured in the exhibition played important roles in taking to a wide audience their personalized accounts of the new nation through writing, lecturing, painting and even through music.

Scientists Take New Look at Solar Data

By William L. Eilers and James Cornell

The late Charles Greeley Abbot, fifth Secretary of the Smithsonian, measured the sun's flow of energy reaching the earth for 50 years in an effort to discover whether variations in the sun — the solar constant — caused variations in our weather.

Climatologists and solar astronomers were critical of Dr. Abbot's theories during his lifetime but now, more than two years following his death at the age of 101, many have concluded he may have been on the right track.

In fact, Dr. Stephen Schneider of the National Atmospheric Research Center, is urging that new, high precision measurements be made of the solar energy output.

In a new book, *The Genesis Strategy*, Dr. Schneider writes: "The measurement of solar variability could turn out to be the most important single geophysical observation that could be made from space or earth. The lamentable oversight that permitted the world to watch men skipping and race-driving across the moon without quietly placing an instrument capable of shedding light on the debate as to whether variations in the sun cause variations in the climate seems one of the major scientific omissions of the 1960's."

Smithsonian scientists have joined in the revival of interest in the relationship between solar activity and the weather. A new review

of the data accumulated by Dr. Abbot is underway and is being compared with solar data obtained by instruments on the Apollo telescope mount of Skylab.

Up to the time of his death in 1973, Dr. Abbot showed visitors to his home a record (rolled around an empty Quaker Oats box) of precipitation at St. Louis, compared to his predictions for the same dates based on measurements of the sun's radiation. Dr. Abbot claimed that he was correct 50 to 70 percent of the time. His forecasting apparently was even closer when it came to predicting the weather for brides-to-be who asked him for advice on their wedding dates (fair weather correctly predicted for 13, doubtful predicted for another day on which it actually rained). It was a great disappointment to Dr. Abbot that most scientists did not accept his theory that the weather is correlated with cyclical variations in the sun's energy output.

Now, the research on relationships between solar activity and terrestrial phenomena begun by Dr. Abbot and his predecessor as Secretary, Samuel Pierpont Langley, is being carefully reexamined and reappraised.

Although present concern about the sun may have been triggered by the need for alternative power sources, there also is increasing interest in other aspects of solar energy. Recent satellite observations, as well as the analyses of various historical and geological records, indicate links between variations in the sun's electromagnetic output and the earth's climate.

So intriguing is the apparent evidence that the Smithsonian, with support from the Fleischmann Foundation, has established the Langley-Abbot Solar Physics Program to improve and refine the measurements needed to test theories about the sun's variability. The program will be based at the Harvard-Smithsonian Center for Astrophysics in Cambridge, Mass., and will engage both Harvard and Smithsonian staff members in research that combines analyses of both modern and historic data with theoretical studies.

The "solar constant" data gathered by Dr. Abbot during 50 years of observations at remote field stations (forerunners of today's satellite tracking stations) will be compared with ultraviolet and infrared data collected in space by Harvard experiments aboard the



Dr. Abbot, in photo taken several years ago, displays a chart comparing his weather predictions with the actual record.

Skylab satellite. The data from both sources may then be used in computer simulations of stellar atmospheres.

As a first step in the Langley-Abbot Program, Dr. Robert Noyes, Associate Director for Solar and Stellar Physics at the Center, arranged a symposium at the recent American Association for the Advancement of Science meeting in Boston to discuss "The Magnetically Varying Sun and Its Effects on Terrestrial Climate."

To paraphrase Dr. Noyes' own summary: "The symposium attempted to integrate current theory and observation concerning the solar interior, magnetic fields, and solar activity and to apply this research in a critical assessment of the possible roles solar variability may play in affecting the earth's long-term weather." Although specific research objectives will be developed in the next few months, that statement might also describe the basic goals of the Langley-Abbot Program.

Guard-Dog Team Wins K-9 Honors

A Smithsonian guard-dog team has picked up a second and a third place honor in the annual metropolitan area K-9 Trials sponsored by the U.S. Police Canine Association.

It was a first-time effort for the Smithsonian, but "John," a four-year-old Doberman-German shepherd, and his trainer, Officer Kenneth Brewster, chief of the Canine Branch of Protection Services, were equal to the challenge.

Officer Brewster and "John" placed second in the novice class, against nine other teams, and third in overall competition among a total of 30 teams entered.

The team thus qualified to compete in the national trials Aug. 15-21 at Fort Wayne, Ind., and Protection Services said they would like to send the pair to the competition if it can be arranged.

The dogs were judged on obedience, agility, searching for an article, seeking out a man hiding in one of five large wooden boxes and attack discipline.

Officer Brewster said that in competition dogs must obey commands given from 50 feet away, scale a six-foot barrier, climb a ladder, walk along a narrow board without falling off and use scent to find the hiding man.

Officer Brewster is a former K-9 supervisor with the Air Force, who joined Protection Services in September, 1974.

Robert B. Burke, Director of Protection Services, praised the canine operation, which began in April, 1975, saying, "It has proven so effective that we intend to expand this service from five to 12 teams in the coming months."



Officer Kenneth Brewster and four-year-old "John" who won a second and third place in recent annual metropolitan K-9 Trials are shown with their trophy.

Folklife Festival Slated for 12 Weeks on Mall

By Susanne Roschwalb

The staff of the Folklife Festival is preparing a celebration that will mark 200 years of America's national heritage in a very special way.

Smithsonian field workers have invited more than 5,000 musicians and craftspeople to participate in the 12-week event.

Coming from 36 countries and every corner of the U.S., they will represent the finest folk traditions, arts and skills of their heritages.

The Festival is organized around theme areas set with structures that typify them, such as a barn, house, tepee, church, and others. Each will speak to the visitor about the past and present.

Work began early in April on the Assembly Hall, a 36 x 40-foot structure modeled after the many Grange and community assembly halls throughout the rural countryside. The Assembly Hall, which will be located in the Regional America area incorporates features of a number of regions. Its high-peaked roof and board and batten walls are typical of such structures throughout the United States. The Assembly Hall will be used for smaller musical performances and auctioneering demonstrations, religious concerts and tale telling.

An English style barn/display area is being built on the Mall by Morris B. Wood of Cadiz, Ky. It is a hybrid of architectural styles found throughout New England and the mid-Atlantic States. A simple design, it contains two lofts, two sets of entrances, a supported overhang that doubles as a shade area where crafts will be demonstrated. Livestock-handling demonstrations will be

featured in the adjacent corral.

Another interesting structure, the multimedia information bank in the Native American area, was the winner of an architectural design competition. Proposals for the "Learning Center" were solicited from ten Native American architects. Dennis Sun Rhodes, an Arapaho with the architectural firm Hadne/Stageberg Partners in Minneapolis, Minn. designed the winner. He

Air, Space Museum Advances Opening

The National Air and Space Museum is now scheduled to open on Thursday, July 1.

Since before construction began on the new building in September 1972, July 4 has been the target date for welcoming visitors to the glass and marble structure on the Mall.

However, the Museum will now be open in time to accommodate the many visitors expected in Washington over the entire July 4 weekend.

The Museum houses such treasures as the Wright brothers' Kitty Hawk Flyer, Lindbergh's "Spirit of St. Louis," John Glenn's "Friendship 7," and lunar samples.

These may be seen now between 10 a.m. and 9 p.m. daily from the Independence Avenue Lobby of the building, on Independence Ave. at 6th St.

draw his idea from a traditional medicine lodge.

The structures in the African Diaspora area will be used to present music, dance, craft and food traditions from Black communities around the world. A zig-zag thatched-roof structure forms the outline of the market area. Religious material is presented in the altar area, a simple wood frame church. A "shotgun" or "hip" house, extension of a traditional African house, is now found in Black communities throughout the southern U.S. and the Caribbean. Its porch forms the stage for smaller, more intimate presentations. Adjacent to the house will be a vegetable garden with a variety of vegetables basic to Black cooking traditions.

Throughout the Festival parawing tents and chartersphere domes will house exhibits and performers. Two 80-foot domes will be used as major food serving areas. The largest dome, 120 feet in diameter, will serve as the hub of the Working Americans area. Storytelling sessions, exploring the on and off-the-job experiences similar and peculiar to working people, will tie together the various skills demonstrations which surround the Narrative Center Dome.

Festival designer Ken Dresser says his objective is to make the Festival comfortable and convenient for visitors and participants.

"The key to this is the arrangement of structures on the site, the placement and visibility of information signage. Special consideration has been given to sound overlap from eight Festival stages, as well as to even dispersment of food facilities and performance areas," Mr. Dresser said.

Record Crowds Expected During Tourist Season

Smithsonian bureaus are gearing up to accommodate an unprecedented crush of visitors during the Bicentennial tourist season according to reports given recently by members of the SI Bicentennial coordinating committee.

Crowds anticipated on a single heavy tourist day are expected to compare to the average number of visitors touring the museums during an entire week currently.

This projection was made at a recent meeting called by Richard L. Ault, Director of Support Activities.

Robert B. Burke, Director of the Office of Protection Services, expressed the opinion that while projected figures may sound high they are within reason for this anniversary year. At the meeting, Mr. Burke addressed the subjects of health and safety, crowd control, security and parking. He cited the average number of visitors to the complex during any current week as being nearly 78,000 and projected a figure just 3,000 less than that number as the expected number of visitors for a heavy tourist day.

"While we expect big crowds, we don't foresee any organized disruption groups at this time," he added.

Mr. Burke called attention to the use of satellite parking and bus services available at three areas, Robert F. Kennedy Stadium, the Pentagon and Fort Myer.

For emergency health and medical attention, Mr. Burke said that extra doctors and nurses would be on duty at museums which have medical facilities and that these facilities would work with extra health units which would be placed in strategic areas under the direction of the Central Health Coordinating Group set up by the D.C. Bicentennial Committee.

Mr. Burke discussed with museum directors the measures which would be taken to prevent overcrowding in any facility.

Kenneth E. Shaw, Director of Plant Services, reported on plans for extra custodial needs, sanitation facilities as well as trash disposal and collection. Mr. Shaw asked that special attention be given to these problem areas as precautionary measures necessary for rodent control.

Mini-garden for Handicapped

By Elizabeth McIntosh

Work is getting underway on a miniature Victorian fragrance garden designed especially for the handicapped, in a sheltered area between the Hirshhorn Museum and the Arts and Industries Building.

James R. Buckler, Smithsonian horticulturist, is planning the garden, which includes a walkway between Jefferson Drive and Independence Avenue.

Funds to initiate the project—\$20,000—were raised by the Smithsonian Women's Committee, and garden clubs throughout the country are expressing interest in further financial assistance. Mrs. Dudley Owen, Women's Committee chairman, estimates that approximately \$2,000 will be needed annually for maintenance.

The mini-garden will be rectilinear in shape and feature a courtyard or plaza, where basic educational plantings will be exhibited. Emphasis will be on seasonal horticultural displays which appeal to the senses: smell, taste, touch, sight, hearing.

Aromatic plants and herbs, such as lavender, rosemary, rue, heliotrope, geraniums, santolina and bayberry stimulate the sense of smell. Eye appealing old fashioned, colorful flowers, many aromatic during early evening, will add to the Victorian atmosphere. These include marigolds, petunias, verbena, chrysanthemums and carnations. Roses will be avoided because of the thorns, since visitors also will be encouraged to touch textured herbs and plants, such as the contorted branches of the Harry Lauder Walking Stick, lambs' ears and the square stems of mint.

Herbs will be planted for taste: sage, parsley, basil, thyme, dill, marjoram. A fountain in the center of the plaza will supply sound, and nestings for birds are also being discussed.

"We hope to achieve a balanced, total landscaping effect," Mr. Buckler said. "The fragrance garden will transform an eyesore area into a quiet retreat, apart from the bustling Mall, where visitors can relax, enjoy elm shaded walks, topiary art, flower and herb beds, and the splashing sound of water."

The Victorian theme will be carried out in the wrought iron benches, ornate flower urns, and authentic lighting standards from the period of 1870-1885. A handsome Victorian fountain will be the focal point of the garden.



James R. Buckler, Smithsonian horticulturist; Mrs. Dudley Owen, chairman of the Women's Committee which raised \$20,000 for the garden, and Harold W. Snider, Smithsonian program coordinator for handicapped, inspect the area between the Hirshhorn Museum and the Arts & Industries Building where the new mini-garden, designed especially for the handicapped, will be built.

In addition to its overall aesthetic appeal, the mini-garden will have walks wide enough for wheel chairs, with surfaces that ensure a secure footing for the elderly and the handicapped.

Braille labels will mark plant specimens, as well as printed identification markers, and flower borders will be edged with interesting textured materials, such as Belgian blocks or cobblestones, as a further aid in guiding the

blind.

A brick retaining wall, and waist high shrubbery, will separate the adjoining parking lot at the Arts and Industries Building, and further enhance the privacy of the garden.

Mr. Buckler is being assisted in working out accommodations for the blind by Harold W. Snider, Smithsonian coordinator of programs for the handicapped.

NMNH Offers Tours in Seven Languages



With large numbers of foreign visitors expected in Washington, D.C. during the Bicentennial year, the Smithsonian's National Museum of Natural History is offering guided group tours of its exhibits in seven major languages. Participants in the program are (seated from left) Glenn Chase, chairman of the NMNH Foreign Language Highlights Docents; Magda Schremp, Docent Program Coordinator for NMNH; Lynn Norton, Spanish tours; Yumiko Gillespie, Japanese; Gina Pragan, German; Kaoru Fukumoto, Japanese; Ortensia Eardley, Italian and French, and Elizabeth O'Dor, German. Standing (from left) are foreign docents Debbie Tari, Portuguese; Gladys Sibbald, Spanish; Laura Mye, Italian, French and Spanish, and Elinor Halle, Portuguese. Other docents in the program are Daisy Mendizabal, Spanish tours; Susan Gulick, Spanish; Stephanie Hysmith, German; Toshiko Takeuchi, Japanese; Teiko Hirasawa, Japanese; George Jubran, Arabic; Bernice Stavisky, French; Edith Grunnet, French; Tony Loezere, French, and Jean-Marie Simon, Spanish and French. Arrangements for these one and one-half hour tours may be made by calling the NMNH Office of Education, extension 6135.

Centennial Exhibition Proves Women's Liberation Isn't New

Women's liberation isn't such a new idea in America. The famed Centennial Exhibition of 1876 in Philadelphia featured a Women's Pavilion presenting evidence to dispel the myth that a woman's place is in the home.

The U.S. International Exhibition of 1876, being recreated this year in the Arts and Industries Building, offered American women their first big opportunity to display the full scope of their capabilities and accomplishments.

By 1876, women constituted 20 percent of America's labor force. While most were working in factories, they also were in such pursuits as invention, literature, journalism, business, science and even politics (although women could not yet vote).

More than 75 women inventors were represented in the Women's Pavilion with their inventions, many of which were already in wide use in the United States.

The "Centennial" exhibition will feature patent drawings and specifications, together with examples of some of the inventions by women that had actually been manufactured in that earlier period.

Shown will be such fascinating items as Mary Florence Potts' cold handle Sad-Iron, Hannah Supplee's "easily threaded" needle, and Martha Coston's night signals developed for the U.S. Navy and used over fifty years, including the Civil War period.

The exhibit will also include photos and brochures describing women's schools which had displays at the Centennial, ranging from academic institutions such as Smith, Wellesley and Mt. Holyoke to schools of design which taught practical skills.

By 1876 American women had already

been working in journalism for some 40 years. At the exhibition in Philadelphia, women wrote, edited and printed a weekly newspaper called "The New Century for Women," and copies of this publication will be on display.

The same group also produced the "National Cookery Book," which featured recipes from throughout the country, from colonial times to 1876.

The Smithsonian exhibit will highlight women's achievements in literature with a display of books written by women of the period on history, politics, and technical subjects, as well as fiction. Authors include Harriet Beecher Stowe, Louisa May Alcott, Mary Mapes Dodge and Mary L. Booth.

Also on view will be fine arts exhibits by women of the period, include paintings, prints, and sculpture.

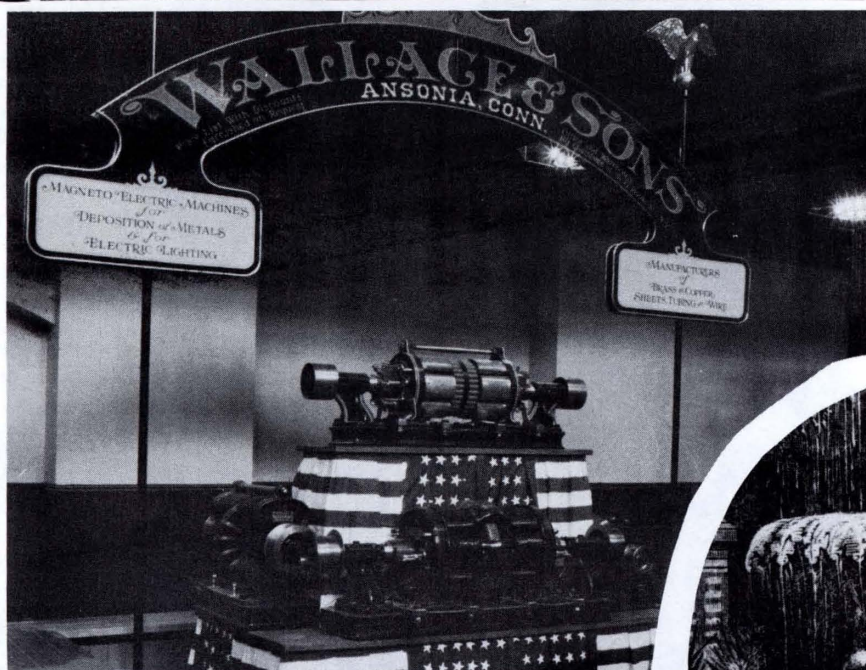
In the decorative arts, the exhibition will display quilts, embroidered pictures, doilies and crochet creations, wax works and ornamental hair decorations of the period.

The 1876 Philadelphia exhibition included patented garments or dressmaking systems developed by a number of women designers. One of these was Madame Demorest who with her husband ran one of the most successful fashion houses in the country. The Demorests, along with Ebenezer Butterick, pioneered in the production and distribution of paper patterns for home sewing.

Coordinator of the "Women's Pavilion" is Deborah J. Warner, of the staff of the Museum of History and Technology.

"This exhibit shows," she said, "that women were doing a lot of interesting things in 1876 that our standard history books have ignored."

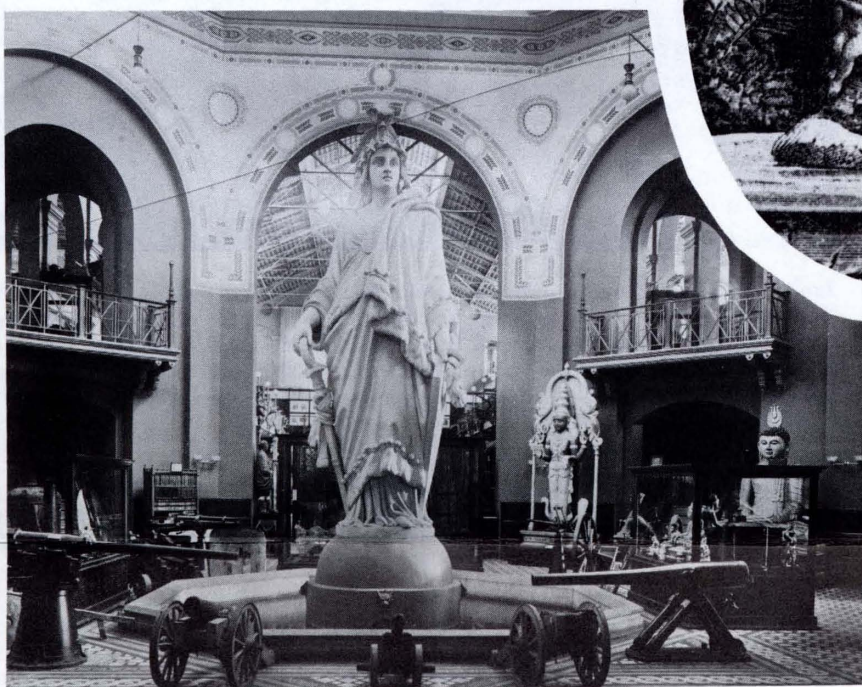
CENTENNIAL SPLENDOR DISPLAYED



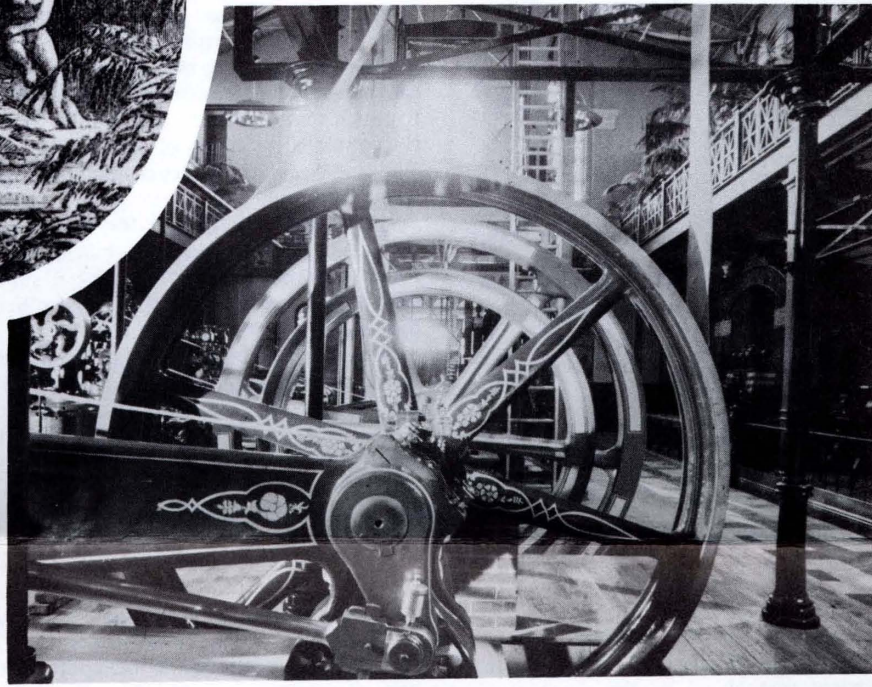
EARLY GENERATOR IN DISPLAY



WEST HALL IN 1881



"FREEDOM" IN ROTUNDA 1900-1967



WEST HALL EXHIBIT TODAY

FOLEY FOUNTAIN TO GRACE ROTUNDA

(Continued from page 1)

Thomas and supported by an engineering design, drafting and specifications writing staff, to work on this project.

Externally, the building was cleaned to restore the rich red color of the brick and accentuate the decorative effects which Adolph Cluss had introduced through the use of buff and blue ceramic bricks with bands of painted black bricks around the facades and outlining the arched windows.

The black bricks were recoated and waterproofing treatment was applied to restore and preserve the exterior of the building masonry. The windows and the gray Ohio freestone sills were painted a buff color to enhance the Romanesque appearance of the building.

Cluss had carried the polychromatic effects to the roof with blue slate enlivened by bands of green and red slate laid in plain patterns.

Because of structural problems, slate had been removed from all but the towers and pavilions in the 1920s and replaced with metal, painted a barn red. During the restoration, this roofing was repaired with bituminous treatment and restored to the original slate coloring.

The masonry infill was removed from the exterior of the first floor of the west and south towers to open the building and provide entrances similar to those which had been there at the turn of the century.

Included in this restoration was the replacement of two interior windows on either side of each entrance, as well as alcoves which may be used for visitor information, checking and guard posts.

All door openings from the exhibit halls were restored with wood paneled doors in arched frames and period trim. Baseboard in a natural finish was provided on both the ground and gallery levels of the building.

Following a request by Mr. Taylor for additional exhibit space, walls on the west side of the North Hall were recessed at the second floor level to form a small gallery. Colonnades and walls were constructed to

match those of the other galleries, resulting in an arcade from which museum visitors may view exhibits located in the North Hall from this gallery level for the first time.

Originally, the building relied heavily on natural light provided by a variety of skylights, roof monitors, clerestories and tall windows. (The only artificially lighted areas in 1881 were the lecture halls, with power provided by storage cells and a dynamo capable of operating between 30 and 40 16-candlepower incandescent lamps.)

The new "old" look is represented with the suspension of lamps that duplicate gasoliers which reflect light with mirrored facets. These were designed by William F. Miner, 1876 project manager, from originals used at the Philadelphia Centennial.

Workmen cut through layers of wall surfaces to expose the original paint colors, which were used as a guide. The grandness of Victoriana has been restored in minute detail to the stencil work above the archways. This decorative artwork was reproduced from photographs for the stencils that appear on the walls of the rotunda and over the archways at the inner ends of the main halls.

While probing the floor in the rotunda to determine its covering, Mr. Murphy and Mr. Thomas discovered the fountain basin which had first been installed around the turn of the century, then filled in and covered over in 1929.

When the building was first opened for President James A. Garfield's inaugural reception in March of 1881, the rotunda had been centered by a colossal plaster statue of "America" holding a torch surmounted by a large electric light bulb.

The statue, whose origins remain unknown, was replaced about 1900 by the original plaster model of "Freedom," a statue case in bronze and erected atop the Capitol Dome in 1863. "Freedom" in turn was removed from A & I in 1967.

Now, visitors to the restored rotunda will see a six-foot white marble fountain which once stood in the center of the Horticultural Hall at the Philadelphia Centennial.

Smithsonian horticulturist James R. Buckler said the fountain, loaned by Philadelphia for '1876,' was sculpted by Margaret Foley, an American working in Italy.

Adding to the aura of yesteryear is a Victorian garden now being constructed in the area west of the Arts and Industries Building and south of the Castle. Bedding designs, embroidery parterres, and trees and shrubs typical of the 1870s as well as period benches, urns, iron edgings and other decorative garden furnishings will be featured, Mr. Buckler said.

Philip K. Reiss, Director of the Office of Facilities Planning and Engineering Services, served as project manager and coordinated all activities concerning building management, exhibits and construction. He was assisted by Walter P. Piper, construction representative.

James M. Goode, curator of the Smithsonian Building, said that although Adolph Cluss left his mark not only on the developing capital city but on American architecture in general, many of the buildings he designed are gone. Of those that remain, the Arts and Industries Building—the Smithsonian Institution's first building designed specially as a museum—is probably the best known.

"It is appropriate," said Mr. Goode, who has done research on the Arts and Industries Building's origin and construction, "that Cluss, a master of the functional and new technology in architecture, should have designed the museum to display objects from the Philadelphia Centennial, an exhibition intended to illustrate the progress and inventiveness of the Victorian era."

"Few people realize that the Smithsonian's National Museum received a major impetus forward when, after the 1876 Centennial, a largesse of exhibits was donated to the Institution, and a major new structure was required to house and display them."

"So," Mr. Goode noted, "it is now doubly appropriate that the Arts and Industries Building should be the setting for '1876,' in a sense its history has now come full circle."

'1876' PRAISED AS RICH BLEND OF S.I. TALENT

(Continued from page 1)

The range and scope of the exhibit varies widely—from Gatling guns and scientific instruments to files and furniture; from a 10-foot tall statue of Gambrinus—the Flemish "King" of brewing—to whales, dolphins, and porpoises.

Writing in the exhibit's catalogue, Brooke Hindle, Director of the Museum of History and Technology, says:

"The concept of producing a microcosmic recreation of the Centennial Exhibition is such a natural one for our museum that it aroused instant enthusiasm on the part of almost everyone asked to help—in one degree or another virtually the entire staff."

"Those directly responsible at the curatorial level are Robert M. Vogel, Curator of Civil and Mechanical Engineering; Rodris Roth; Anne C. Golovin; Herbert R. Collins and Deborah J. Warner. The enormous restoration program included the efforts of William K. Henson, Charles E. Dennison and William T. Tearman of the Science and Technology's Technical Laboratory, and John Stine of the Division of Transportation."

"Special thanks go to William Miner, 1876 Manager, and the executive committee which included Mr. Vogel; Mr. Miner; Benjamin Lawless, Assistant Director for Exhibits; Robert C. Post, Historian in the Director's Office, and Cynthia Cole."

Added Dr. Hindle, "With as many cooks as were involved in '1876,' rarely was there unanimous agreement about anything. Yet, far from spoiling the broth, the result has a richness that could not have been attained otherwise. The product is an exhibition we believe to be the most successful recreation of its kind in the history of museology."