

SI Parking Now Available For GS-15's with 25 Years

by George J. Berkclacy

"Parking is permitted to all who apply. Record will be kept by license plate number; no specific space will be assigned. No stickers or waiting lines."

Thus read the Smithsonian memorandum to employees desiring a parking space.

The year was 1942.

The year 1969 is another matter. Parking is so scarce today that 450 to 500 employees form the waiting line for a space.

"Some prospective employees," notes Margaret Pfeiffer, SI parking coordinator, "have refused to take a position here because they were not granted a parking space."

"As a matter of fact," she adds, "some bargained for a space at the expense of retirement, health benefits, or annual leave."

Mrs. Pfeiffer, a 30-year veteran of the SI, has been in charge of parking since 1944, when spaces were made available on a "first-come, first-served" basis.

The situation was such that, in the early 1950's, a group of employees protested against making additional spaces available in the SI Building parking lot!

It meant the tennis court must go. It went.

From that moment on, things began to worsen. The crushing blow came in 1964, when parking was granted, as it is

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KIER SEEKS REASONS

Starfish Devouring Coral in Pacific

by TOM HARNEY

Paleobiologists rarely get involved in an expedition that urgently concerns contemporary man, and that is one reason why the one Porter Kier took part in last month is so unusual.

Kier, chairman of the Smithsonian's Department of Paleobiology, and two other staff members of the Museum of Natural History, Thomas Plalen and Dennis Deveney, dove off a Pacific island looking for starfish of the species *Acanthaster planci*, a creature whose voracious appetite is menacing the life of the Pacific's stony coral reefs.

The starfish, popularly known as the "Crown of Thorns" because of its covering of poisonous spines, was considered relatively harmless until a few years ago, largely because there weren't many around. Only one was found in a 1928 survey of life off Australia's Great Barrier Reef.

"It was always a treasure to find," said Kier in an interview before he left for the Pacific.

He had brought one of the Museum's specimens out of storage for examination. It was about a foot and a half in diameter, with 16 arms and plenty of thorns. Kier handled it gingerly. There are reports of men having arms paralyzed for days after being pricked by the thorns of live starfish.

The current trouble, Kier said, started about six years ago when the population of starfish exploded off the Great Barrier Reef of Australia.

Tourists looking through glass-bottomed boats near the Reef's Green Island resort spotted great concentrations of the starfish and saw that large areas of coral stone were bleached and dead where the creatures had fed.

Acanthaster planci dines by extruding its stomach over coral polyps and digesting them. One of the starfish can devour an area twice the size of its disc diameter in a 24-hour period or about one square meter per month. Once the coral is dead it has never been known to come back to life.

The Australians tried desperately to eliminate the infestation. Divers went down and speared thousands of the creatures, but they multiplied too fast to stop (An adult starfish spawns twice a year and discharges as many as a million eggs each time). To date, 100 square miles of coral off the Barrier Reef have been destroyed, and the starfish are continuing to advance.

The Australian Government has funded a study of the problem, but the findings are not yet available.

In 1967 the infestation spread to Guam, another location where the species had never been commonly reported before.

By 1968 someone estimated that there were as many as 300,000 starfish off the island's coast.

It was like a forest fire. In the space of two and a half years more than 90 per cent of the coral along 38 kilometers of Guam's coast has been killed and the end is not in sight.

The natives of Guam are reportedly frightened and upset by the invasion. When the coral dies the rich system of life that it supports breaks down and fish disappear. The natives depend upon the fish catch off the reefs for the protein in their diet.

This is the economic consequence of an unchecked starfish explosion. Hundreds of thousands of persons living on Pacific Islands could starve in the event of an epidemic spread of starfish.

In the longer run, the dead coral could be easily eroded by the storm waves, and without coral barriers the islands could be swamped by a rising ocean.

On Guam, the infestation was first observed by Richard H. Cheshier, a marine scientist at the University of Guam. He noticed that the concentration of starfish originated in an area where a new channel was being dredged.

The correlation between the infestation and dead areas of coral where there has been dredging or dynamiting, has led to the suggestion that starfish larvae may find it possible to breed in uncontrolled numbers on coral areas that man has killed. These areas may be without the micro feeders that usually eat starfish larvae and keep its numbers within safe limits.

Early in the game, the Australians thought they had found the cause of the problem. Tourists were known to have depleted the numbers of a snail that is known to be a predator of the starfish—the triton. Its shell is prized as a souvenir. But it has since been established that the tritons just don't eat enough starfish to have any effect on its population growth.

Other persons have suggested that some other tiny natural predator of starfish larvae has been killed by an increasing percentage of atomic fallout, DDT or tetraethyl lead in the ocean waters.

These are the questions that Kier and 60 other scientists are seeking to answer.

The expedition they were part of was organized by Westinghouse with financial backing from the U.S. Department of the Interior. Interior is concerned about the economic disaster a starfish plague could cause for the U.S. Trust Territories of Micronesia.

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THE SMITHSONIAN TORCH

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SI Awaits Lunar Samples For Study, Possible Show

Smithsonian scientists expect to have samples of the minerals that Apollo 11 astronauts brought back from the moon under their microscopes within the near future, and there are also hopes that a batch of the lunar rocks will soon be on public display in a Smithsonian museum.

Secretary Ripley has sent a letter to NASA Director Dr. Thomas Paine formally requesting a sample from the 80 pounds of lunar surface material that the astronauts brought back.

NASA will temporarily lend some of the moon minerals to scientists at the Smithsonian and other institutions for study but will hold back a substantial part of the rocks for its archives. It is from this latter material that the Smithsonian is seeking a sample for display at the MNH or the Air and Space Museum.

Moon rock samples are already scheduled to go to MNH for scientific study.

Dr. Kurt Fredriksson and Dr. Brian Mason of the Mineral Science Department division of meteorites are two of the 142 principal investigators chosen by NASA to analyze the moon rocks. John A. Wood and Edward L. Fireman of the Smithsonian Astrophysical Observatory are also principal investigators.

Margaret Pfeiffer, BMD parking coordinator, and William Jolley, SI Building lot guard, check records to determine if car in rear, bearing "SI" tags, is parked legally. Fortunately for the Smithsonian's chief executive, it is.

Fireman will perform measurements of the AR³⁷ and Ar³⁹ (argon) content, and determine tritium content by low-level counting; Wood, mineralogic and petrologic studies by optical microscopy; Mason, mineralogic investigations; and Fredriksson, elemental analysis by electron microprobe.

Assisting Mason as a co-investigator will be Mineral Science Department chemist Eugene Jarosewich. Helping Fredriksson will be Department chemist Joseph Nelen and museum specialist Grover Moreland.

Moreland, an expert at cutting minerals into thin sections for analysis, went to Houston to assist the Lunar Receiving Laboratory in preparing specimens for distribution to investigators.

A 16-man Lunar Sample Analysis Planning Team in Houston is charged with deciding what specimens the investigators get and how much.

Under the rules established by NASA, when notified the investigators have to go in person to the Lunar Receiving Laboratory to pick up samples.

Mason is currently in Australia on an expedition, but he is expected back by the time the rocks are ready to be released. Fredriksson, on the other hand, has been in his offices at the Smithsonian since the return of Apollo 11, listening with interest to the reports about the characteristics of the lunar rock.

He said that he has no idea how much material he will get but that "We can do quite a bit with just a few milligrams."

"I would hope to receive a thin section, one thousandth of an inch thick, mounted on glass, and some milligram grains."

Some of the specimens distributed will be vacuum packaged at the request of the investigators to prevent contamination, but Fredriksson said that this is not necessary for his purposes.

Fredriksson came to the Smithsonian staff to head the division of meteorites in 1964, the year the division obtained an electron microprobe under a grant from NASA. It is the microprobe that he will use to analyze the moon rocks.

The two-room laboratory in the division of meteorites that houses the electron microprobe is a highly complex assemblage of high voltage electronic circuitry that Fredriksson's staff is constantly rebuilding and improving in order to keep up with technological advances.

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Clapp Named As Assistant To President

Charles L. Clapp, assistant to Secretary Ripley since early 1967, has left the Smithsonian to become Special Assistant to the President of the United States.

Dr. Clapp will be working on domestic programs under Arthur Burns, the counsellor to the President. His principal initial duties will include working with various task forces conducting studies at President Nixon's direction in fields of domestic policy. While at the Smithsonian, Dr. Clapp undertook a wide range of project assignments for Mr. Ripley. Prior to coming to the Smithsonian, he was legislative assistant to Massachusetts Senator Leverett Saltonstall.

Dr. Clapp is the author of the widely read book, *The Congressman: His Work As He Sees It*.

Carl Tillinghast Dies, Assistant SAO Director



Carlton W. Tillinghast Jr., 36, SAO's Assistant Director for Management, died Sunday, July 27, at Boston's Beth Israel Hospital after an illness of several months.

Mr. Tillinghast joined the Observatory in 1959 as Chief of the Computations Division. One year later, when he was only 26 years old, he was named Assistant Director. In that position he was responsible for all administrative functions and non-research activities of the Observatory, including the over-all supervision of an international network of astrophysical observing stations.

Mr. Tillinghast was a 1955 graduate of the Massachusetts Institute of Technology with a Bachelor of Science degree in Nuclear Engineering. He served as a second lieutenant with the U.S. Army Signal Corps at Fort Monmouth, N.J.

Prior to joining the Observatory, Mr. Tillinghast was employed by Pratt and Whitney Aircraft Corporation of East Hartford, Conn., as an Analytical Nuclear Engineer, and by the Mitre Corporation of Bedford, Mass. as a Research Engineer.

He is survived by his wife, Suzanne, and four daughters of Brookline; a sister, Caroline; and his parents, Mr. and Mrs. Carlton W. Tillinghast Sr.

MHT's Danzenbaker Plays Key Role in Stamp Design

Warren Danzenbaker, museum specialist in the Department of Science and Technology, is leaving his stamp on the John Wesley Powell centennial commemoration. (See story at right.)

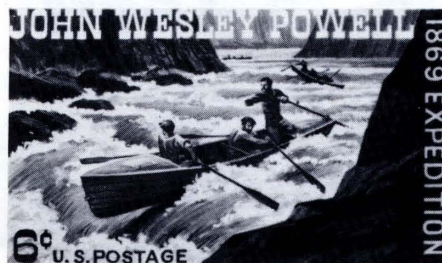
Danzenbaker was instrumental in the design of the 6-cent postage stamp that the Post Office issued this month to honor Powell.

The whole project started with a bus-ride conversation. Forest Service artist Rudolph Wendelin, who draws Smokey Bear, is a neighbor of Danzenbaker and fellow commuter. He began discussing the Powell diary Danzenbaker was taking home to research for the MNH Show. Wendelin commented that he would like to try designing a stamp if only he could get the technical information needed to make the stamp accurate.

Until that time Danzenbaker's interest in stamps had been limited. He had assumed all that was required was an appropriate design. He soon learned however, that every detail must be historically correct.

They could not just show Powell navigating the Colorado. They had to put his crew in the right kind of boats. They had to choose a particular day of the expedition that they wanted to illustrate and then figure out where the group would have been on that day and depict the landscape properly. They had to decide who would most likely have been in which boat on that day, and who was probably steering.

With Danzenbaker's research assistance, Wendelin came up with a four-color



horizontal stamp showing three small boats shooting the Colorado rapids. At the tiller of the lead boat is Major Powell, guiding two oarsmen. His right arm—half of which he lost at the Civil War Battle of Shiloh—is extended.

Chosen over designs submitted by several other artists, the Powell commemorative is Wendelin's fourth postage stamp. The Post Office loaned to the Smithsonian all of the artwork, proofs, first impression, and other materials for the Powell exhibition after the stamp was issued in Page, Arizona, August 1.

Warren Danzenbaker is now an avid stamp collector.

Kreysa Appointed

Dr. Frank J. Kreysa, associate director of the Science Information Exchange and chief of its Physical Sciences Division, has been appointed to membership on the Scientific Manpower Commission as the representative of the American Institute of Chemists. Eleven leading scientific societies are represented on the Commission, which concerns itself with the recruitment, training and utilization of scientific personnel.

Special Exhibit Marks Powell Trip Centennial

During the summer of 1869—exactly 100 years before this epic summer of moon exploration—Major John Wesley Powell, a one-armed veteran of the Civil War, and nine companions were running the perilous rapids of the Colorado River in small wooden boats.

They were exploring the last sizable unknown area within the United States.

An exhibition entitled *The Indomitable Major John Wesley Powell: Scientific Explorer of the American West*, in the foyer of the National Museum of Natural History, is the Smithsonian's major contribution to the nationally celebrated centennial of Powell's first descent of the Colorado River.

The exhibit traces this dramatic first descent of the Colorado in a series of changing scenes accompanied by a description of the highlights of the journey in Powell's own words, written shortly after he completed the trip in 1869.

Following his explorations in the 1860's and 1870's, Powell was to become head of both the U. S. Geological Survey in the Department of the Interior and of the Bureau of Ethnology of the Smithsonian Institution. He was instrumental in the establishment of both organizations.

This major commemorative show was prepared under the direction of John C. Ewers, senior ethnologist in the National Museum of Natural History.

By-Word Giving MNH Exhibits Gift of Speech

The exhibits at the Museum of Natural History are beginning to talk!

Their new ability comes from a system called "By-Word." Now in its third month of operation, By-Word provides running commentaries on some 50 exhibits via headphones. The headphones rent for 50 cents.

Currently restricted to the Museum's first floor, By-Word will be expanded to include 50 more exhibits in MNH and MHT by the end of the summer.

Designed, built, and run by Educational Service Programs, Inc. (ESP)—which has installed similar systems at the Wright-Patterson Air Force Museum, the Fort Worth Science and History Museum, the Indianapolis Children's Museum and others—By-Word is the latest in a series of attempts by Secretary Ripley to extend the effectiveness of exhibits by audible means.

Sound effects, including Indian dances, charging bison, and a steam locomotive, are all authentic, the ESP people point out. In fact, they say the reason the rotunda elephant does not yet have a By-Word script is that their man in the jungle has not yet found enough charging elephants to make a suitable tape.

According to Gilbert Wright, who prepares the scripts for the Smithsonian, By-Word is attempting to provide commentaries that are brief enough not to be boring, complicated enough to cover the subject, yet simple enough to be understood by children and written in such a way anyone can come in at the middle of an exhibit's tape and not lose all meaning.

If the number of people seen wearing headphones is a measure of the system's success, then By-Word is a smash hit.

struction crew renovating the Castle. They promise to hold that territory for a long time to come.

Things are just as bad in the other museum parking lots: Too many applicants, too few spaces.

One MHT wag summed up the problem:

"It's reached a point where I'm going to trade my Buick for a bike, and park it between two Volkswagens until I'm caught."

Diving Teams Investigate Starfish Menace

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There is fear too that the infestation might eventually spread to the Caribbean Islands in the Atlantic.

The 60 diving scientists broke up into four-man teams and fanned out to various Pacific Islands to look for signs of starfish epidemic.

Plalen, a research assistant in the Paleobiology Department; Deveney, a post-doctoral research fellow from the University of Hawaii working in SI's Invertebrate Zoology Department and

Kier were part of a team that went to the island of Yap in the West Caroline Islands. All three are experienced scuba divers. Kier, an expert on echinoids, took up diving eight years ago because he found it necessary to investigate the life cycles of living marine animals in order to understand fossils.

The three dove for two weeks and then returned to Guam to pool their findings with the other scientists, hoping to come up with some common denominator that will give a clue to the cause of the population explosion and its control.

Yap, perhaps significantly, has not yet had any dredging or dynamiting in its reef waters, and Kier and the divers found no starfish infestations. Some other teams, however, who went to Micronesian islands that have experienced dynamiting and oil pollution in the coral areas, found hordes of the creatures.

American military forces plan to dynamite a shipping channel into Yap this fall and Kier would like to return to the island next year to see if "progress" has brought with it a starfish population explosion.

"What we want to find out is if it is just a transient problem and nothing to get excited about, or if it is really a tremendous ecological event that threatens the extinction of an entire species," Kier said before he left on the expedition.

"If it is we should find out fast. Every minute we have to stop it may be precious."

Parking Problem

(Continued from page 1.)

today, under the Point System—the great ego deflator.

Position held, grade, length of service—these became the coveted qualifications of would-be parkers and the collective menace of GS-3 clerk-typists and GS-11 professionals with one week of service.

Special Assistant to the Assistant of the Assistant Secretary. GS-15. Twenty years of unbroken Smithsonian service.

These are the dreams of the GS-1. Forget it.

There now are some 3,000 employees competing for 700 spaces. And brother, if you park your car in a space that doesn't belong to you—a \$5.00 ticket will grace your window.

Strategy has caught up with the dispensers of "legal" parking: the rear bumper of a car in a parking space must display a nifty, traceable sticker.

"Parking is privilege—it's not mandatory," says Mrs. Pfeiffer.

Actually it's more like war—one the employee is fast losing—at least on the Independence Avenue side of the Mall. Consider these casualty reports: The 9th Street underpass wiped out 25 spaces on the east side of the A&I Building, while 30 spaces were turned over to the con-



Associates Hire New Program, Business Heads

There is a new team on board at the Smithsonian Associates.

Mrs. Susan Hamilton has joined the Associates as program director, succeeding Mrs. Lisa Suter Taylor. And, to handle the increasing management problems involved in producing programs for a fast-growing membership, Marlin C. Johnson has been named the group's first business manager.

Mrs. Hamilton has been chief of programs for the Baltimore Museum of Art for the last five years, creating and administering all public events and membership programs as well as managing museum publications.

She has also directed a work rehabilitation program for emotionally disturbed people in conjunction with their medical treatment, done free-lance creative and science writing, been an advertising copywriter, and served as an assistant editor and feature writer on *Newsday* in Long Island.

Johnson has been an extremely active associate for some time. Holder of a degree in business management, he spent 20 years in private business in California. He became acquainted with the Associates when he took one of their courses in archeology after moving to Washington.

From there Johnson moved into volunteer work, for the Associates, conducting tours for them to Williamsburg, Princeton, and Philadelphia, and taking part in various other programs. With his business background and interest in the Associates, he was a natural choice for this new position—in which he becomes not only the first business manager but the only man on the staff.

Neither Mrs. Hamilton nor Johnson has been aboard long enough to formulate definite plans for future programs, but they both firmly believe that their basic role is in community-oriented, lay-level education.

The Associates exist, Mrs. Hamilton notes, "to provide exposure for the community to the Smithsonian and its collections—very simply, to let people know the answer to the question, 'What's it all about?' Our purpose is to continue to develop lively relationships between the community and the Smithsonian through people's meaningful participation and involvement in the Institution."

Moon-Mapper Article a Winner

Maps of the moon, never more on the public mind than this summer, nonetheless were occupying at least one man's mind some two centuries ago.

"The first really useful maps and globe of the moon were produced as a labor of love rather than as an endowed project of national policy, but they were produced by a practicing artist rather than by an academic scientist," British historian W. F. Ryan pointed out in the *Smithsonian Journal of History*.

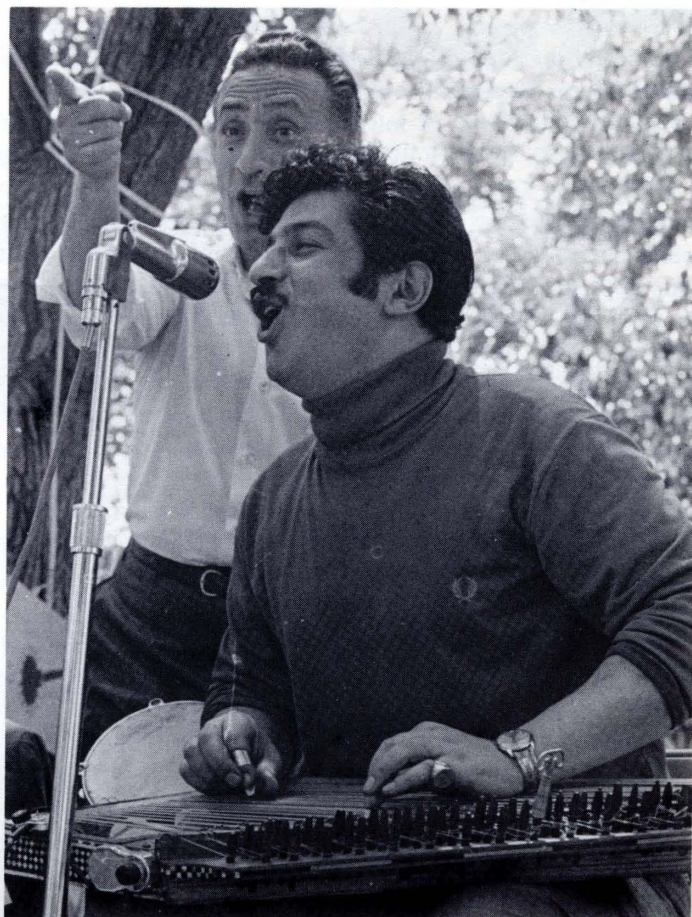
Ryan's article, "John Russell, R. A., and Early Lunar Mapping," was selected by the editorial board last month as the prize-winning article in the *Journal's* first volume. (1966.) A prize of \$200 was awarded.

"John Russell did not content himself with drawing the portraits of scientists; he had his own contribution to science to make," Ryan points out. "This consisted of drawing the largest and most accurate picture of the moon produced up to that time; in making a mechanical moon globe bearing an engraved moon map, the 'Selenographia'; in designing a relief globe of the moon; and in engraving a contrasted pair of full-moon maps which he called the 'Lunar Planispheres.'"

Reprints of the lavishly illustrated article are available from the Museum Shops.

On the Mall: Folklife Festival Scenes

Turkish singers gave their all for one of the many informal concerts held during the day sessions of this year's festival, which attracted more than 600,000 visitors.



Photos by Harry Neufeld

One of the busiest men at the festival was its director, Ralph Rinzler, who traded his crutches for a mandolin and did a little pickin' for the folks at an afternoon concert.



Pennsylvania's Kojancic brothers displayed an awesome mass of muscle chopping trees, rolling logs, hurling axes, and racing through solid beams with cross-cut saws.

Biologists Elect Ayensu Director

Dr. Edward S. Ayensu, of the MNH Botany Department, has been elected executive director of the Association for Tropical Biology for 1969-70.

The Association sponsored an interdisciplinary symposium on the topic "Adaptive Aspects of Insular Evolution" at Mayaguez, Puerto Rico, this summer. The meeting was attended by some 90 scientists from all over the world.

Present from the Smithsonian were Dr. Thomas R. Soderstrom, Dr. Clifford Evans, Dr. Betty Meggars, Dr. Donald Duckworth, Dr. Richard S. Cowan, Dr. Wallace Ernst, Dr. Oliver Flint, Dr. Raymond Fosberg, Dr. Mary Rice, Dr. Velva Rudd, Stanwyn Shetler, Miss Francine

Study of Lunar Sample

(Continued from page 1.)

When Fredriksson brings back his thin section sample from Houston, he will put it under the microprobe and bombard it with a finely focused electron beam that will cause elements in the sample to emit bursts of x-rays, comparing the patterns of these x-rays with the patterns of x-rays of known elements on earth.

"We're seeking to tell the accurate compositions of different kinds of minerals that can tell us something about the temperature at which the rocks form and if they are damaged by impact and by radiation," he says.

Berkowitz and Dr. Ayensu.

The Association's next symposium will be held in Ghana in early 1971 on the subject of "Similarities and dissimilarities of tropical forest ecosystems of the Amazon and Congo." Dr. Betty Meggars will be program coordinator.

erals that can tell us something about the temperature at which the rocks form and if they are damaged by impact and by radiation," he says.

"From doing this we can tell how long the material has been sitting undisturbed or if the meteorite activity is so intense that there is a 'gardening effect' that disturbs the lunar surface."

All this information will yield clues about the origin of the moon and perhaps the origins of the earth.

Whatever Fredriksson and the other investigators find, they won't have anything to say for publication. NASA ground rules prohibit the principal investigators from publishing or talking to reporters until after they meet for a conference early next year in Houston.

'Some Impressions of My Own'

The Sacred Grove, a new book on museums by Secretary Ripley, will be published by Simon and Schuster in October. Portions of the chapter entitled "Some Impressions of My Own" are presented here.

My own philosophy of museums became established at the age of ten one winter when we were living in Paris. One of the advantages of playing in the Tuileries Gardens as a child was that at any one moment one could be riding the carousel, hoping against hope to catch the ring. The next instant one might be off wandering the paths among the chestnuts and the plane trees, looking for the old woman who sold *gaufres*, those wonderful hot wafer-thin, wafflelike creations dusted over with powdered sugar. A third instant in time, and there was the Punch and Judy show, mirror of life, now comic, now sad. Another moment and one could wander into one of the galleries at the Louvre. I still remember the day I found the ship models, fantastically intricate in skeletal form, or cut away to show interiors, high-pooed galleons, eighteenth-century men of war, or the early-nineteenth-century marriage of technologies of sail and steam. Then out to the garden again where there was a patch of sand in a corner to build sand castles. Then back to the Louvre to wander through the Grand Gallery.

There was no essential difference in all this. The juxtaposition was natural and easy. No threshold of tiredness and lack of concentration was reached. It was as easy as breathing in and out.

For children, then, museums should be infinitely easy, diverse, varied. There should be fun and games somewhere, perhaps just outside, and concentration and indirect learning inside, but there should be no real distinction between the two. The outside should flow into the inside, the inside out.

Even at this age I loved sculpture and painting with an unformed eye. I adored pretty and touching little girls like Houdon's bust of Louise Broguiart, full of innocence and charm and a poignant, pensive expression. I loved stylish pictures like the Raphael portrait of Baldassare Castiglione, elegant but conveying great charm in the sitter. I used to look at military pictures, Gericault and Delacroix, for I already was buying toy soldiers, hoping some day to be able to afford Napoleon's General Staff. . . .

Other days we would take my sailboat and sail it in the Luxembourg Gardens, or shop for toy soldiers, or armor and arms along the Quai du Louvre. Here, near the seed store of the Vilmorin family, there were pet shops which offered everything from soft-bills like Cuban solitaires to white mice. The arms and armor at this stage occupied me a great deal. I was taking fencing lessons and longed for a court rapier or a Scottish basket-hilted claymore, for I was very proud of my mother's Highland blood. I was heavily in thrall to Sir Walter Scott, whose endless narratives suited the spirit of derring-do engendered by the Salle Gardère and my sisters' and my fencing.

But it was on the way to sailboat sailing in the Luxembourg Gardens that I met the Musée de Cluny. This rapidly became my favorite museum in Paris. Here in this dark, rather dank late-fifteenth-century palace I became fascinated by the reality of history. The everyday objects of life enthralled me, from the magnificent paneling and tapestries of palace life to the clothes, particularly boots—vast postillions' boots, cavaliers' boots, ladies' boots and shoes with exaggerated toes, sometimes so long that the tip was brought up and fastened to a garter; there were the platform clogs worn to avoid filth in the streets. There were also coaches and models of coaches and incredible arms and armor including a helmet from the field of Agincourt.

There were things one could touch, thank heavens. The thrill that was conveyed in touching rusty armor or horse caparisons that had once enclosed panting steeds pulling coaches over rutted cobblestones was a never-ending one. . . .

Our second city of that winter was Florence. Here we stayed long enough to infect me with a never-to-be-forgotten impression of the Uffizi and Pitti Galleries and the Bargello. Smells were very important to me and still are: wet asphalt in Paris, old harness oil, lemon oil, damp wood and stone in the Cluny, and lots of dry musty smells in Florence, mixed with the aromatic but dry-dusty smells of winter in Fiesole, bay leaves, and olive leaves, and dried-out hay. Of course, in the nineteen-twenties horses were everywhere, pulling drays and wagons, fiacres and victorias, in Paris and the Italian cities. One misses the delicious stable smells these days as a usual accompaniment of streets and museum entrances and cathedral squares where the sweepers were forever shoveling up fresh manure. Horse manure is as much a part of my memories of Florence as the cold stone and old wood, the incense smell of the churches and the damp wood, oil-leather smell of the galleries. . . .

My next most vivid impressions were of Schönbrunn, for we spent a month in Vienna.

To me it was curious to return not long ago to Schönbrunn, after forty years, and to see again with a start of recognition the blue-and-white Chinese porcelains in the Chinese room of that palace, to recognize them, along with the Indian miniature paintings in the "Millions" rooms which had so moved me as a child.

Why I liked blue-and-white porcelain is perhaps explained by growing up with a good deal of it in our house in Connecticut, some collected by my grandfather and some by my great-grandparents. It perhaps seemed familiar, but I know I have always liked it. The palace museum at Schönbrunn was made complete by the zoo, the oldest in Europe, with its beautiful baroque buildings in the park. Tea in the breakfast pavilion with elephants in the distance was a perfect foil to the intricate scenes of war and hunting in the Mughal paintings inset in the walls in baroque frames

in that superb room in the palace.

Several years later, when I was thirteen, we were in India and I had my first chance to buy a Rajput painting of the Mughal period, an eighteenth-century portrait. It took three days, and by dint of using my newfound Hindi to bargain in the manner I had read about in Kipling I got the portrait miniature for about five dollars. Of course I was immensely proud. The possibility of visiting the Lahore Museum and seeing the great gun, Zamzama, on its carriage outside the front of the Museum was a dazzling one. Sure enough there it was; "a gun terrible as a dragon and huge as a mountain," the great fourteen-foot giant of copper and brass on which Kim had insolently lolled in the opening scene of my favorite book on India. We saw Zamzama in all its glory, though I could only imagine that Kim himself was somehow personified in the urchins playing about the Anarkali Sadr Bazaar opposite. . . .

It was this trip to India which seemed to bring out a confirmed interest in natural history. For a while I had been leaning towards archaeology, but in the preceding winter, visits to the Boston and the New York Museums of Natural History, and of course the New York zoos in Central Park and the Bronx, had gradually begun to leave their mark.

I had become well-inoculated with the virus of natural history exhibits by the curious verisimilitude of the diorama of the beaver and its underwater den in the Boston Museum of Natural History. The oily yellow surface water feeling conveyed by the smooth glass seemed perfect to me, as did the modeled cow lilies and the underwater world cut away below at which I peered. It could not have been more real to me than if I had been one of Charles Kingsley's water babies.

In New York, Louis Agassiz Fuertes' paintings of the flamingos of Andros Island, with the foreground designed by Dr. Frank Chapman, seemed completely real. Shimmering in the sun, the vermilion flamingos transported me to a tropic isle in a way I found irresistible. And so it was that when we came to India in that winter of 1926-7, I was fully prepared for a bout of museum-going. Having arrived at the port of Bombay, my family naturally made directly for the Prince of Wales Museum which since 1923 had housed the exhibits of the Bombay Natural History Society. I realized later that natural history museums in the Oriental region have largely originated as private collections or as a result of the efforts of private societies such as the Bombay Natural History Society, which had been founded in 1883 by a group of amateur naturalists in business and career government service in India. The Prince of Wales Museum is an impressive structure in a distinctive beturreted version of Victorian-Mughal style. It now includes a later wing, opened in 1939, full of natural history dioramas, the most modern of their kind in Asia. But we were too early for these modern groups, which I did not see till World War II. However, there was a splendid exhibit of great Indian hornbills at the nest, the tree cut away to show the temporarily incarcerated mother and young walled up with mud and dung in true-to-life form so that the nest aperture is only a slit through which the male passes in food to his charges. The stuffed male was William, formerly a pampered pet of the Society, who had lived in the Society's exhibit rooms for twenty-six years until he died, and who had presumably never had occasion to perform such arduous domestic chores in life. During his lifetime William was death on vermin, which are always plentiful in office and museum buildings in Bombay. As the Society reported much later in their *History* in 1933, "Cockroaches were to his liking, and a mouse, a snake or even a large rat he dearly loved. . . . One rat he held in his pickaxe beak for more than an hour before finally crunching it up. If he had not overeaten himself on a bit of wire he would probably be alive to this day. Others have succeeded him, but the 'Office Canary,' as he was affectionately called, is greatly missed."

I was sorry to see William merely stuffed, but there were two live pythons, one fifteen feet long, the other twelve. That is, there had been just before we got there, but the larger, roused by the fact that his companion had happened to make away with a black partridge, ended by swallowing the partridge (which was in his former friend at the time) plus a small red blanket, so that there happened to be only one visible python left.

From Bombay we went to Calcutta where perhaps the largest museum in Asia exists—the Indian Museum, founded in 1866, and based on the collections of the private society, the Asiatic Society of Bengal. That earlier museum, I discovered, had received its real impetus from the East India Company's Board of Directors, who, in 1814, had appointed Dr. Nathaniel Wallich curator of archaeological and zoological collections. Wallich and his successors, notably Edward Blyth, had presided over the amassing of important collections through the nineteenth century made by amateur naturalists, men in the police, customs and forestry services, as well as naturalists attached to various military, punitive or boundary expeditions. Marine collections were made by surgeon-naturalists, so-called, aboard R.I.M. survey steamer *Investigator*. There were important exhibit galleries in those days of insects, fish, amphibia, reptiles, birds and mammals, and I joined huge milling throngs of Indians in fascinated appraisal of the stuffed animals. Most of these stuffed creatures were very well mounted, as taxidermy was thriving in India in prewar days due to the lively competition among the maharajas and other wealthy big-game fanciers to bedeck their walls with grimacing creatures of the jungle.

Southern and eastern Asia have somehow come to be a second home to me from those early impressions of mine on the 1926 trip down to the present.

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