

The Sinking of the Peacock. Alfred T. Agate

The Smithsonian Institution salutes the 1838 U.S. Exploring Expedition, which launched the national museums

"These enthusiastic artists, and those headlong, indefatigable pursuers & slayers of birds, beasts, & fishes & the gatherers of shells, rocks, insects . . . are leaving their comfortable homes, to follow the strong bent of their minds, to garner up strange things of strange lands. . . ."

— Midshipman William Reynolds, 1838

By JULIE ANN MILLER

Nearly a century and a half ago, an epic voyage around the world launched the young United States on its course as an international scientific power. Six wooden sailing ships — on which nine civilian scientists and artists joined U.S. Navy crews — set out on a perilous journey to explore Antarctica, Australia, South Sea islands and finally the uncharted Oregon Territory coast. The mission: to collect data and specimens in support of navigation, commerce, diplomacy and science. The expedition returned almost four years later bearing charts, maps and about 60,000 specimens.

The legacy of the Exploring Expedition, with its strict, headstrong and aloof commander Lieutenant Charles Wilkes, includes tales of adventure, songs of sea peril, navigational charts that were used for a century and 19 volumes of scientific reports and atlases. The wealth of biological, geological and anthropological specimens the expedition collected helped force the Smithsonian Institution, which had originally operated solely to fund and publish basic research, to establish a national museum. The expedition also marked the commitment of the U.S. government to professional scientific research.

"Magnificent Voyagers," an exhibit honoring the Exploring Expedition, opened at the Smithsonian's National Museum of Natural History in Washington, D.C., last month. The curators liken the preparation of the exhibit to the original expedition. Each took four years and

required participation of both the Navy and scientists of a variety of disciplines. The recent exploration involved tracing descendants of the original voyagers and sifting through cartons of diaries, correspondence and official records found in basements and attics, as well as in historical archives. Specimens from the expedition, often poorly labeled and deteriorating, were collected from various



Hawaiian volcano as painted by expedition artist T.R. Peale.

American Museum of Natural History

departments of the Smithsonian and from museums around the world. Because the original expedition was nicknamed the Ex. Ex., the exhibit is informally called the Ex. Ex. Ex.

The Scientifics, the name given to the civilian members of the Exploring Expedition, worked under numerous disadvantages. There were the usual hardships of living on the small, crowded ships with livestock on the decks and short rations and bad-tast-

ing water. In addition, the staterooms constructed on the gun deck for expedition members were wet, dark and inadequate for making drawings or preparing specimens. To make matters worse, Wilkes was more committed to the naval, rather than the scientific, aspects of the mission. The Scientifics often had inadequate time to collect specimens in areas where Wilkes did not choose to do surveying. Yet the accomplishments of the scientific team are impressive.

Perhaps as its most important naval accomplishment, the expedition claimed the first sighting of the Antarctic continent — on Jan. 16, 1840. The sighting, however, was not recorded in the ship's log until three days later. Unfortunately this delay led to the claim being disputed. A French exploring expedition in the same waters also recorded a landfall on Jan. 19.

It was not the icy shores of Antarctica but the more fertile lands of Australia, the Pacific islands and the northwestern U.S. coast that most excited the Scientifics. Observations of the fiery volcanoes on Hawaii, the immense Australian sandstone gorges and the ringlike Pacific coral reefs provided rich fodder, especially for the imagination of James D. Dana, the expedition geologist. Dana, who personified the emerging full-time scientific profession, was responsible for the most basic and enduring scientific contributions of the expedition.

Dana's observations, for example, on the "scattered" South Sea islands became fundamental to the later discovery of plate tectonics, one of the unifying

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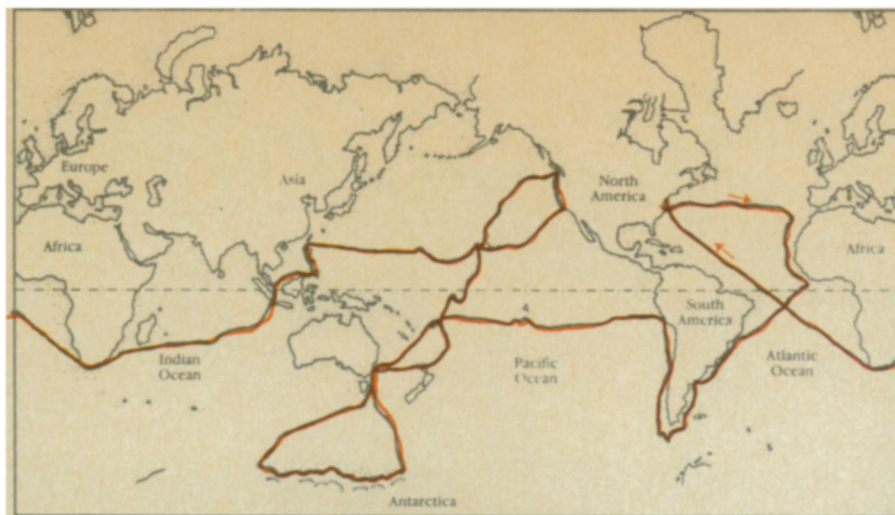
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concepts of modern geology (SN: 3/13/82, p. 178). "The epithet *scattered*, as applied to the islands of the ocean, conveys a very incorrect idea of their positions," Dana wrote in his expedition report *Geology*. "There is a system in their arrangement, as regular as in the mountain heights of a continent."

Dana recognized that the volcanic islands form chains that are parallel even in distant parts of the ocean. When he dated islands by the relative degree of erosion since their volcanoes became extinct, he discovered that within each chain there is an age progression. For example, in the Hawaiian group the northwesternmost island, Kauai, is the oldest and the islands become progressively younger to the southeast.

Although Dana, lacking knowledge of the earth's interior, never proposed the modern theory of plate tectonics, his observations later became among the strongest evidence for the movement of plates of the earth's crust. According to the modern theory, island chains result from a plate sliding over "hotspots," fixed heat sources deep within the earth. Each hotspot generates a separate line of volcanoes, parallel to other volcano lines on the same plate.

At the time of the voyage, anthropology had just begun to attract scientific interest. Although the expedition included a linguist, no one was assigned specifically to investigate human societies and cultures. The various members of the expedition all collected cultural objects from the inhabitants of the lands visited. Altogether they accumulated more than 4,000 cultural objects, the largest ethnographic collection ever made by a single sailing expedition.



The route of the U.S. Exploring Expedition circumscribed the globe.

Smithsonian

Sometimes the contact with native societies was hospitable. On one Fijian island, the expedition members were honored with a war-club dance depicting historic and mythical battles. They were given a large pile of war clubs and two masks worn by the dancers, the only two historic Fijian masks now known to exist.

Occasionally the contact with native societies was violent. Two officers were killed, for example, when a surveying party was attacked in western Fiji. Wilkes then ordered a retaliatory attack that destroyed the two principal towns on the island, Malolo. A bit earlier while surveying the Fiji Islands, Wilkes investigated the 1834 murder of 10 crew members of an American ship. A Fijian leader named Vendovi was taken prisoner. He survived the rest of the expedition, but died only hours after landing in New York. His skull and a death mask were then added to the expedition collection.

The most important sections of the expedition's ethnographic collection are from Fiji and Polynesia. They document a

specific historical period of increasing influence from the Western world. The treasures include not only such objects as carved wooden figures, pleated bark skirts and fishing equipment, but also the written observations of the expedition members. For example, William Reynolds reported that a Fijian native who visited the ship was eating the flesh of a cooked human head. "Every one on the ship was affected with a nervous & terrible feeling of mingled horror & disgust," Reynolds wrote to his family.

Of all the expedition scientists, the biologists had the most difficult task. They were faced both with the task of sampling the animals and plants of a wide range of poorly described environments and with Wilkes's unwillingness to accommodate their special needs.

"Hereafter no specimens of coral, live shells, or anything else that may produce a bad smell, will be taken below the spar deck, or into any of the rooms." Wilkes ordered early in the expedition. Joseph P. Couthouy, the conchologist, complained that these rules would put a complete stop to examination or drawings of his collection. Wilkes also demanded that Couthouy limit the number and size of coral samples collected.

Wilkes disliked Couthouy from the start, and when Couthouy became ill Wilkes dismissed him from the expedition. Wilkes wrote in his autobiography, "[Couthouy] was the most troublesome fellow I had to deal with. . . . He was a happy riddance and I congratulated myself that the Expedition had got rid of him."

Despite the problems, the expedition produced the first major collection of exotic animals to come to the United States. The collection included many species previously unknown to Western naturalists. From the Hawaiian islands, the Scientifics collected and described birds that have since become extinct. For example, artist Titian R. Peale is thought to be the only naturalist to see alive and describe the habits of the now-extinct honey eater *Chaetoptila angustipluma*.

Among the expedition's contributions



Expedition members making measurements of giant trees in Oregon.

Smithsonian

to zoology was its description of animals that produce shells. Earlier biologists had described attractive shells in detail, but ignored the soft parts of the organisms contained within them. The expedition report included descriptions of more than 400 new mollusks. Insects were collected throughout the expedition, but the entire collection was lost when one ship, the *Peacock*, foundered while attempting to enter the Columbia River in the Oregon Territory.

Fifty thousand pressed plants make up the largest expedition collection. Live plants were also shipped back from ports en route. Among the species new to botany was a Hawaiian plant resembling a yucca but which sends up a sticky stalk of blossoms each June. This plant was named *Wilkesia* in honor of the expedition's tenacious commander.

The most prized of the botanical discoveries was the cobra lily, an insect-eating pitcher plant that became named *Darlingtonia californica* after William Darlington, the leading U.S. botanist, who had advised the expedition's planners. Today one aged tree, *Encephalartos horridus*, in the U.S. Botanic Garden is thought to be a living relic of the voyage.

The return home was disappointing. In the United States there was little interest in the expedition's accomplishments, and a series of court-martials was required to settle problems that had festered on the long journey. Wilkes himself was publicly reprimanded for exceeding in 17 cases the number of lashes commanding officers were authorized to inflict on crewmen.

The collection was housed temporarily in the Patent Office in Washington, D.C. This was the federal government's first effort to manage a museum. The specimens had to be defended against souvenir collectors, including President Tyler's wife. Meanwhile, some government officials and naturalists argued that the collection should serve as a core for a national museum as part of the Smithsonian Institution. By the time the patent commissioner needed to reclaim his space, a continuing flood of specimens was coming to the Smithsonian from naturalists who accompanied the surveyors of the western United States.

At last the Smithsonian Institution reluctantly agreed to house these national collections as long as Congress appropriated funds for their care. In 1858, the expedition specimens were finally transferred. In the ensuing years, within the Smithsonian's ever-growing museum collections, "the Wilkes collections have remained as a symbol of the support of the federal government for exploration, exhibition and research," says the Smithsonian book, *Magnificent Voyagers*, that accompanies the exhibit. "... [I]t demonstrated that American science had come of age." □



This carved wooden figure, obtained in New Zealand, represents a Maori ancestor. Such figures were kept in sacred meeting houses. This one is about 11 inches tall.



Geckos of many species were collected from various locations. These pictures were drawn from field sketches for the herpetology report more than 10 years after the expedition returned.



The sea anemone *Actinia paumotensis* was described by Couthouy and drawn by expedition artist Joseph Drayton.



The explorers collected ironweed (*Metrosideros*) in New Zealand. This watercolor is by expedition artist Alfred T. Agate.



Cobra lily, *Darlingtonia californica*.