

THE POLAR TIMES



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The Polar Times

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Secretary's Letter

I have been going through the old issues of *The Polar Times* and *The Little America Times*. August Howard chronicled great feats of both scientific and geographic exploration in the polar regions as they occurred during his tenure as secretary of the Society. We can't match that in the new *Polar Times*. The polar regions have been mapped and both scientists and tourists visit the ends of the earth on a comparatively routine basis.

We have had to shift our focus somewhat and are feeling our way along. The history of polar exploration by Canadians and Americans is not well documented compared to the exploration by other nations. We intend to include historical clips featuring North Americans in the polar regions (see pages 7 and 14). We plan to continue the chronicle of scientific exploration; it is the primary industry on the Antarctic continent and a growing industry in the north.

Editor's Note

What a wonderful response we're receiving from our subscribers! We want you to know how much we appreciate all your letters of praise, advice and news from our polar regions and Arctic friends. Please keep writing. It's through your input that we hope to keep improving your magazine.

Present-day human activity, both north and south, is important, and we will aim some of our coverage at native people of the Arctic, industrial development, environmental concerns and ecology. Tourism is becoming a very important activity with more and more ships carrying visitors deep into the polar icepacks (many with old polar explorers aboard as tour guides). We must report on their activities. I feel that it is necessary to keep abreast of the politics that affect the polar regions. The Antarctic Treaty is a primary disarmament and environmental document, and we are already seeing more international cooperation in the Arctic.

Above all, we intend to keep the spirit of exploration alive.

I do appreciate the continuing flow of "Attaboys" for the first two issues. Considering my comments above, I now need your comments on the future of *The Polar Times*. Keep clipping those articles for the next issue. This is your society and your magazine.



Be sure to let us know if you would be interested in an American Polar Society lapel pin. We think it's handsome enough to wear with pride. (See page 19.)

Also, a special thanks to Pat F. Wright, whose wonderful illustrations from the book *Silas* are displayed throughout this issue.



The Polar Times

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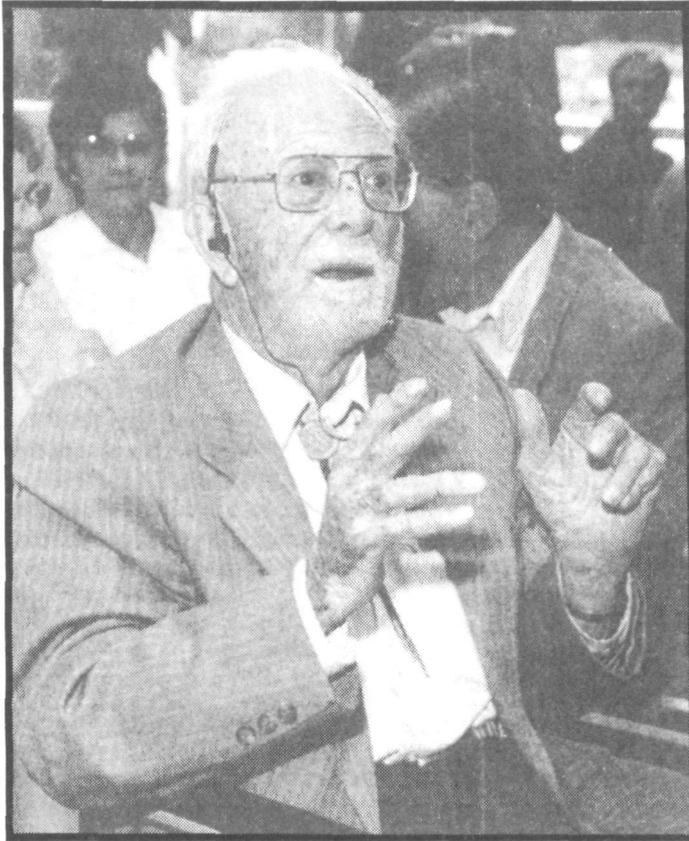
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The Polar Times

American Polar Society • Spring-Summer 1994



Laurence McKinley Gould, shown at UA dedication ceremony, is renowned for his work as a polar explorer, geologist, educator and diplomat.

by JIM ERICKSON

The Arizona Daily Star, Nov. 1993— One way to assess Laurence McKinley Gould is to tally paper, gold, brick and ice: 27 honorary degrees, 10 medals, one University of Arizona building and six Antarctic physical features that bear his name.

A better way to measure Gould, the first American geologist to set foot on Antarctica and a UA professor emeritus of geosciences, is to talk with former students and colleagues.

"He's why I'm in teaching now," said UA geosciences lecturer Peter L. Kresan, who took Gould's glacial geology course in 1971. "He had a way of capturing people's imagination and interest. People would take the course just to hear him talk, and it was the best

loved by those people he served."

Friends of Gould and George Gaylord Simpson, the former UA vertebrate paleontologist who died in 1984, donated more than \$7,000 to build a large glass cabinet to display the more than 30 honorary doctorate hoods awarded to the two researchers. Several dozen people gathered in the Gould-Simpson geosciences building foyer Tuesday to dedicate the display case.

Gould, the 97-year-old polar explorer, geologist, educator and diplomat, sat before the colorful display cabinet in a wheelchair.

UA Geology Legend Honored Again at 97

course I've ever had."

"He's someone who motivates and inspires," said UA geosciences Professor George H. Davis. "I've heard people say that Larry Gould is the only person they've ever met who possesses the quality known as charisma.

"You go in and talk to Larry Gould, and you are around a person of just tremendous intelligence and wisdom and wit, and you just feel better as a result of that experience. He is just revered and

He waited as UA President Manual Pacheco and former UA presidents Henry Koffler and John P. Schaefer stepped to the lectern to speak. He smiled from time to time and fiddled with the controls of a hearing aid, finally snatching it from his head in disgust and announcing, "I can't hear a damn thing with these."

Laurence McKinley Gould was born in Lacota, Mich., on Aug. 22, 1896. At 13, he picked strawberries for a penny a box, then used the money to buy a biography of Abraham Lincoln, who became his role model.

When he was 17, Gould left for Boca Raton, Fla., where for nearly two years he taught kindergarten through eighth grade in a one-room schoolhouse.

Gould enrolled at the University of Michigan in 1916 and intended to become a lawyer and get into politics—like Lincoln.

But his academic career was interrupted by military service in World War I. As a member of the U.S. Army ambulance service from 1917 to 1919, he took part in the Meuse-Argonne offensive and, later, in the occupation of Germany. He was cited for bravery on the battlefields of France.

After the war he returned to Ann Arbor, Mich., and switched his major to geology. He earned a bachelor's degree *magna cum laude* in 1921, a master's in 1923 and a doctorate in 1925. His doctoral dissertation dealt with the geology of the La Sal Mountains in southeastern Utah.

...in 1926 he served as a geologist on an arctic expedition sponsored by the University of Michigan.

(Continued on page 4)

(Continued from page 3)

He was hired by his alma mater as a geology instructor and, in 1926, he served as geologist on an arctic expedition sponsored by the University of Michigan.

In March 1928, Cmdr. Richard E. Byrd, the celebrated aviator and polar explorer, chose Gould as one of 80 men to accompany him on the first of his four privately sponsored expeditions to the Antarctic. Gould was named senior scientist and second-in-command.

During that expedition, Byrd became the first person to fly over the South Pole, and Gould conducted the first extensive geological and glaciological survey of the Queen Maud Mountains in Antarctica's interior.

Gould and five companions began the grueling 1,500-mile sled-dog jour-

ney in November 1929 from Byrd's Little America base camp. Over the next 2½ months they crossed snow bridges that collapsed into deep crevasses behind them, struggled through blinding blizzards and endured weather so cold that it nearly froze their eyelids shut.

Under Gould's direction, the party mapped and charted the mountains and collected rock samples that showed Antarctica had once been densely forested. They found patches of lichen clinging to some rocks—the only indigenous life found in the region—and collected sandstone, demonstrating that the Queen Mauds were part of a great uplifted fault system that stretched across the continent for more than 1,000 miles.

Gould described the experience, the last great Antarctic dog sled trek, in his 1931 book, *Cold: The Record of an Antarctic Sledge Journey*.

Gould's polar exploits brought him many honors, including the Congressional Gold Medal, Norway's Cross of St. Olaf, the Explorer's Club Medal, the American Geological Society's David Livingstone Gold Medal and the Chicago Geographical Society Gold Medal.

In 1930, Gould left the Antarctic and returned to his teaching post at the University of Michigan. Two years later, he accepted an appointment as professor of geol-

ogy at Carleton College in Northfield, Minn.

Gould was named Carleton's president in 1945 and quickly transformed it from a relatively obscure coeducational college into a top-flight private liberal arts institution. He launched a drive to raise \$10 million to finance campus construction, then brought in more than \$12 million within three years.

Gould returned to the Antarctic in late 1956 to lead American scientific efforts on the continent during the 1957-58 International Geophysical Year. That assignment, during the height of the cold War, brought him into international deliberations with the leaders of the 11 other nations that shared in the International Geophysical year investigations of Antarctica.

It is generally acknowledged that the remarkable cooperation which characterized the International Geophysical Year led to the 12-nation Antarctic Treaty of 1959, which proclaimed that the continent and surrounding waters shall "continue forever to be used exclusively for peaceful purposes."

For those efforts, Gould received the Distinguished Public Service Award, the highest award the Navy confers upon civilians.

Gould retired from Carleton College in 1962 and, the following year, he joined the University of Arizona faculty as a professor of geosciences, a position he held until 1978.

Gould served as the president of the American Association for the Advancement of Science in 1965 and as president of the united chapters of Phi Beta Kappa from 1958 to 1961.

In 1984, when asked to list the ingredients of success, Gould told an Arizona Daily Star columnist:

"Discipline—it's indispensable to any successful thing, isn't it? The other essential is integrity. And you can't be lazy. If you have those, and you have any gifts at all, well, there you go."



From Gould's book, *Cold: The Record of an Antarctic Sledge Journey*

Nathaniel Brown Palmer and the Discovery of Antarctica

by **GEORGE L. CAMPBELL,**
Stonington Historical Society

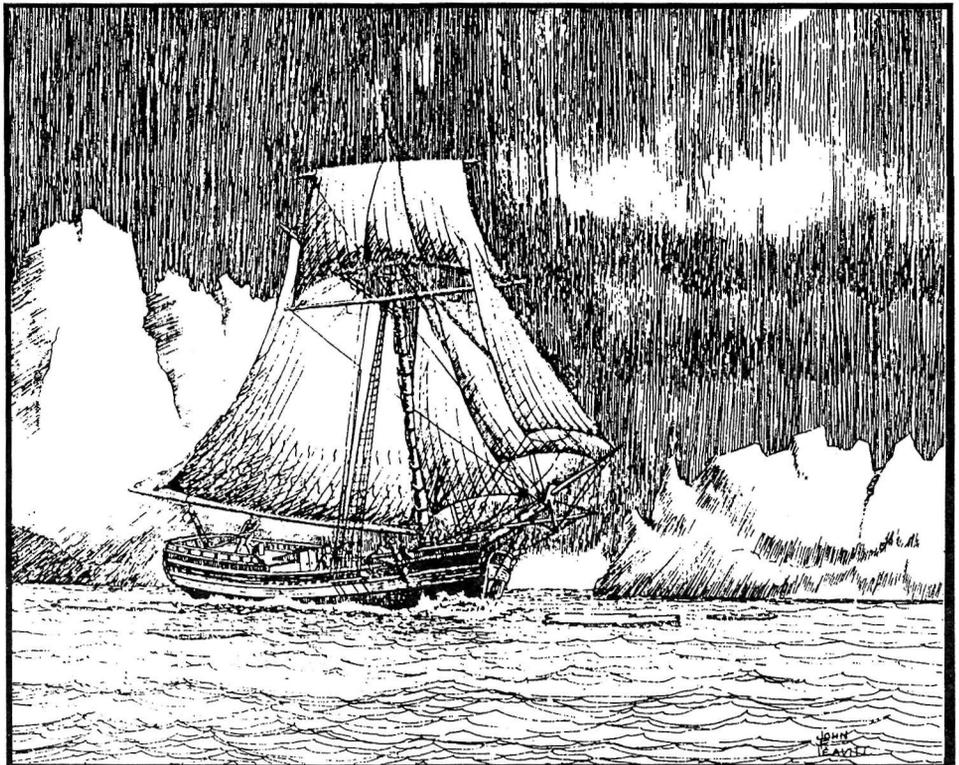
The story of the discovery of the Antarctic continent is an epic of particular interest to Stonington history. That Antarctica was the last of the continents to be discovered is well enough known. What is less well known is that it was a man from Stonington, 21 years of age, at the time and in command of a relatively small sloop, who is credited with its discovery one hundred and fifty years ago.

Late in the year 1820 a Stonington sealing fleet comprising eight vessels under the command of Captain Benjamin Pendleton was in the recently discovered South Shetland Islands. The slaughter of seals had been so heavy that the search was on for rich new hunting grounds; and to this end, Pendleton sent out the scout of the fleet, the 47-foot sloop *Hero*, commanded by Nathaniel Palmer of Stonington, on a mission of discovery. By mid-November, which was early in the short summer season, Palmer had sailed beyond the 63° parallel, in seas of fierce gales and mountainous blocks of ice, to a point several hundred miles due south of Cape Horn. For the 17th of the month, a brief entry in his log has been regarded as the first record of the sighting of Antarctica.

What Palmer actually saw that day is still not entirely clear; and whether or not he was, in fact, the first man to sight Antarctica has been a matter of some dispute over the years. But it can be said with certainty that he was the first to coast any part of the continent.

On November 16 of 1820, while exploring Deception Island, Palmer could see the distant mountain range that he had possibly seen the year before while on the *Hersilia*. That afternoon he headed in its direction and in his log for noon of the next day mentioned "immense ice bergs" and an ice-filled strait, the far side of which has been taken to be the continent of Antarctica.

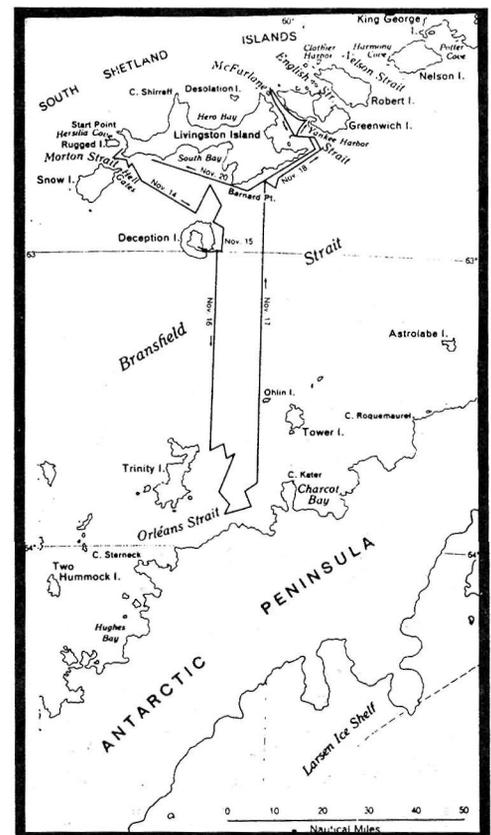
On his return to join the rest of the



Drawing by John Leavitt of the *Hero* in which Palmer discovered Antarctica in 1820.

fleet, Palmer was becalmed one night in a heavy fog. As the bell for the first watch was struck, he was startled to hear an apparent echo through the fog. The mystery continued throughout the balance of the night until at dawn he found the *Hero* flanked by two great ships some distance off on either side.

As it turned out, these were the ships of the Russian expedition sent out by Alexander I under the command of Admiral von Bellingshausen, who invited Palmer aboard. What happened at this meeting is not entirely clear, but it seems that the venerable Russian, resplendent in full dress, was most cordial. Having himself been on a mission of discovery for the past two years, he asked the young captain where he had been. Palmer described his experiences, and his log, which is now in the Library of Congress, was sent for to verify his remarks. What happened next is a matter of some dispute. According to Bellingshausen's log, which was translated in 1945, he wrote of merely having met a young American sealing captain and talked of sealing. Palmer, unfortunately, never wrote his version except in a



Exploratory Cruise of Captain Nathaniel B. Palmer in November 1820.

letter or two quite a few years later, but he did tell the story to his friends. It is not unlikely that a good story became even better in the telling thereof, and that some inaccuracies crept in, as attested to by his confusing Bellingshausen with another Russian admiral in a letter some years later. What does seem likely, however, is that Bellingshausen, in a generous spirit, fully recognized Palmer's great achievement and apparently declared that the new land was to be known as Palmer's Land, which since that time, at least on American maps, it has continued to be called.

In any event, with Nathaniel Palmer's role in the discovery of Antarctica, Stonington has gained at least a footnote in World History. In later years, Palmer was the great pioneer of the clipper ships in the mid-nineteenth century and built the fastest ships of the day. He became widely known throughout the world as "Captain Nat," and though he became perhaps more identified with New York, he never lost his close ties with Stonington. After clipper ships began to fade with the advent of steamships, his interests shifted to yachting and to hunting. He not only was a superb shot, but developed and owned a number of the finest yachts of his time. To add to his many accomplishments, his generosity and commanding bearing have made him a legend.

Palmer's entry in the log of the *Hero* for 17 November 1820, which is the first record of the sighting of the Ant-

arctic Continent, reads as follows:

"There 24 hours commences with fresh breezes from SWest and pleasant. At 8 P.M. got over under the land found the sea filled with immense ice bergs. At 12 hove to under the jib. Laid off and on until morn-



ing—at 4 A.M. made sail in shore and discovered—a strait—trending SSW & NNE—it was literally filled with ice and the shore inaccessible. We thought it not prudent to venture in ice. Bore away to the Northerd. Saw 2 small islands and the shore everywhere perpendicular...."

Penguins

Seven of the world's 17 species of penguin can be found in Antarctica. The two most commonly seen are the Emperor and the Adelie. The Emperor is three to four feet tall and weighs between 50 and 75 pounds. It nests on the sea ice, laying a single egg in the autumn. The male Emperor then takes the egg and rests it on his feet, tucking it into the down between his legs, to keep it from freezing. He stands virtually immobile for several months during the winter while his mate feeds at sea. The chicks are born in the spring, after the female returns.



Adelie penguins are much smaller, about 18 inches high and 15 pounds when full grown. They lay their eggs (usually two) in the spring on nests of pebbles, usually stolen from another penguin's nest. The pilfering of stones is a matter of life and death for the young penguins, as an adequate nest for the parent to stand on is all that keeps the delicate egg safe under the adult's body.

Two-Year Polar Research Mission Planned

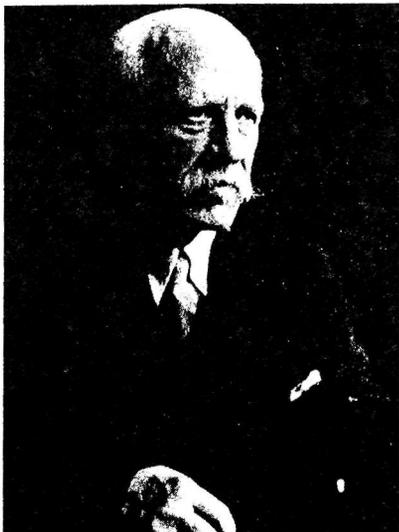
News of Norway, November 1993—One hundred years ago Norwegian explorer and scientist Fridtjof Nansen began an expedition as daring—if in a way more constrained—as his 1888 trek across Greenland. In 1893 he lodged his specially constructed sailing vessel *Fram* in polar pack ice and drifted with it for several years, a feat that became a benchmark in the science of oceanography.

A new research voyage, the Nansen Centennial Arctic Program, is now being planned to increase knowledge of the Arctic ocean's role in the global environment. Starting next year, in a

two-year repetition of Nansen's frozen passage, a ship manned by 25 scientists will drift across the northern seas.

Periodically research teams will be replaced to enable as many as 100 other scientists to participate, says the program's chairman, Professor Tore O. Vorren at the University of Tromsø.

Two research camps will be established on the ice at distances of approximately 60 miles on either side of the vessel. These will drift along with the ship while hovercraft vehicles equipped as mobile laboratories will shuttle between the camps and the ice-bound mother ship.



Norwegian explorer and scientist Fridtjof Nansen (1861-1930)

Scientists Seek Warnings of Environmental Problems In Seas

by MALCOLM BROWN

The New York Times, Nov. 23, 1993—Scientists say the world's oceans could serve as natural alarm systems for warning of impending climate changes, pollution crises and other global hazards, and they have urged the speedy development of new technologies to monitor the seas.

At a meeting of the Acoustical Society of America last month, scientists from several nations, including Russia, outlined new techniques for using the oceans, particularly the Arctic Ocean, to find clues to the approach of environmental trouble.

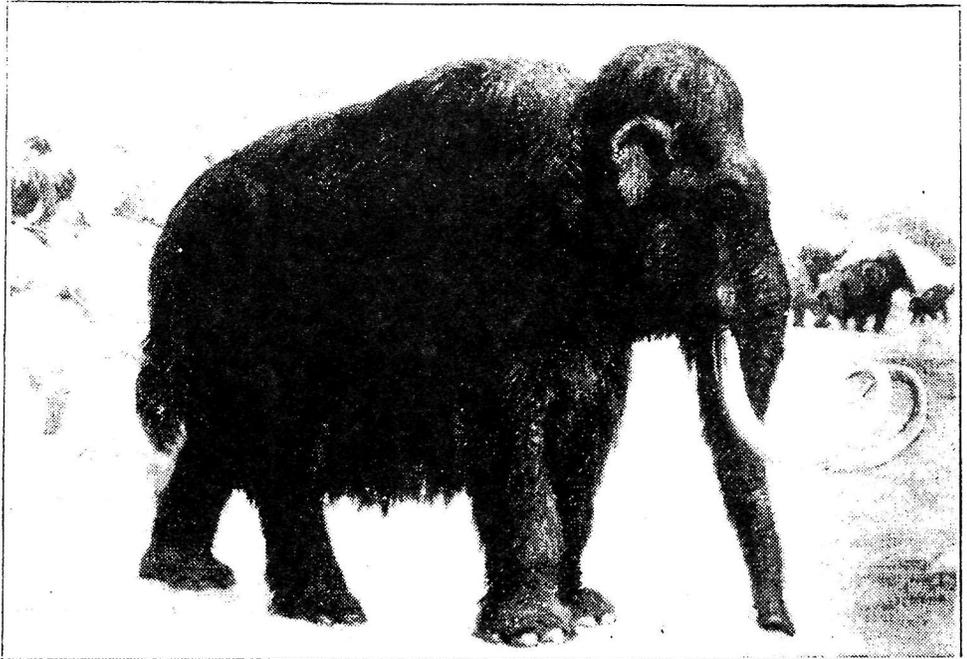
They presented evidence that the chaotic underwater sounds of cracking polar sea ice may contain a signal that could be used to predict potentially catastrophic global temperature changes. Transient temperature changes in the atmosphere seem to increase polar ice noise, and several research groups hope that long-term measurements of this noise will settle the controversy as to whether increasing levels of carbon dioxide are causing a greenhouse effect, raising the world's temperature.

During the meeting of acousticians, Dr. James K. Lewis presented an analysis of ice noise and atmospheric temperature change measurements that suggests a close relationship between the two. He devised a mathematical model that took into account the saltiness of the water under the Arctic ice, the amount of fresh snow covering the ice, the heat conductivity of the ice and other conditions that prevailed during the test period. From these factors, he calculated what changes might be expected in atmospheric temperature and compared the results with actual atmospheric temperature measurements made during the period.

The equations Dr. Lewis developed successfully predicted atmospheric temperature changes corresponding to 11 of the 13 episodes of excessive ice noise—noise at a frequency of 500 hertz, or roughly the pitch of B below middle C on a piano. Some of the noise, which was recorded under water by hydrophones in the Arctic Ocean, matched nightly periods of atmospheric cooling. Other noise episodes coincided with atmospheric temperature changes over several days.

Some of the scientists at the meeting expressed skepticism that Dr. Lewis's relatively simple model could be used to predict long-term global climate changes, but others, including Dr. Gavrilov, said they believed some such technique could be honed as a reliable measurement tool.

Remember when . . . ? From *The Polar Times*, Oct. 1938



© American Museum of Natural History. Painted by Charles R. Knight under the direction of Henry Fairfield Osborn. A painting of the northern or woolly mammoth which inhabited North America during the ice age.

Soviet Plans Bathysphere For Sea Bed in the Arctic

By The Associated Press.

MOSCOW, April 2.—Soviet Russia, having explored the Far North from its ice floes and skies, disclosed plans today to send scientists into its depths.

A bathysphere, it was announced, is being designed for studies of the herring and cod fishing beds at the bottom of the Barents Sea. It is planned for a crew of three, with four large windows through which a motion-picture camera could photograph underwater life.

The bathysphere, it was said, would have a diameter of 5.9 feet with walls more than an inch thick, and would weigh four and a half tons.

Joseph Stalin and the Lazar Kaganovitch—is nearing completion in Leningrad shipyards. After tests of the engines, winches, pumps and other mechanical parts, the icebreakers will make brief sea tests and then go to the relief of icebound Soviet ships in the Arctic Ocean.

Those ships include half of the Soviet Union's large fleet of Arctic freighters, carrying coal and other necessities for arctic stations and virtually all of the Soviet icebreakers. Many passengers, including women and children, are marooned on them.

The new icebreakers are equipped with catapults for launching planes, which will collaborate in relief of the stranded ships and the regular work of guiding freighters through the northeast passage connecting the Atlantic and Pacific. Each icebreaker also will carry three motor boats and seven smaller tenders, as well as a radio station capable of exchanging messages with any station in the world and scientific laboratories.

Russia to Bring Mammoth Out Of Polar Icebox

3-Ton Crate, Big as Trolley Car, Built for 20,000-Year-Old Carcass Found Last Fall on Arctic Isle

By Joseph Barnes

Copyright, 1938, New York Tribune Inc.

MOSCOW, May 21.—A refrigerated ship carrying an empty box bigger than a trolley car will leave Vladivostok next month to bring back the carcass of the mammoth found last October on Wrangle Island, in the Arctic Ocean, north of the easternmost tip of Siberia.

The extinct prehistoric elephant, weighing four tons, will be moved intact with seven tons of the frozen crust in which it has been preserved for more than twenty thousand years. At the same time, it was learned that despite precautions taken by the Soviet party wintering in the Arctic Ocean, which discovered the carcass, some of its still fresh meat had been eaten by wolves. Part of the head and trunk had been devoured, but the entire body, covered with four-inch-long hair, was reported whole.

Dr. Hekker, of the paleontology institute of the Soviet Union's Academy of Sciences will head the expedition to recover the carcass. He says the condition of the beast's nine-foot spiral tusks is still unknown. The animal was found in a standing position with head lowered and with only the top of the head and the ridge of the back emerging from the eternally frozen mud which had covered it since the end of the glacial period.

The box, constructed for moving the mammoth, weighs three tons. A special raft of three flat barges will

ferry the carcass from shore to ship.

Only One Other Discovered
The Wrangle Island mammoth is believed by Soviet scholars to outrank the Bereskovia mammoth, which was discovered in 1801 and is the only other large prehistoric carcass ever found in the Arctic refrigerator. Now in a Leningrad museum, the Bereskovia mammoth measures 16 feet 4 inches from head to tail and 9 feet 4 inches high, and has tusks 9 feet 6 inches long. The dogs of the expedition which discovered it ate large portions before it could be protected.

The hairy mammoth ranged Siberia and northern North America during the glacial period. It differed from the existing Indian elephant, to which it was closely related, in that it had long, dark hair and a dense, woolly fur to protect it from the cold. It also had well-developed teeth and two extremely long tusks, sometimes more than ten feet long, which curved upward and outward with the tips directed toward each other.

ARCTIC ICE CUT BY JET

Chizhikov, Soviet inventor, has devised a method of cutting Arctic ice with a jet of water under a pressure of 375 pounds to the square inch. His machine looks like a railway car, travels on wheels and cuts ice up to a thickness of seven feet. The invention is expected to facilitate the work that icebreakers must now do. At present these heavy ships ride up on the ice and break it down by sheer weight. After which they are laid up for repairs.

Bent on exploiting the riches of the frozen North, the Soviet Academy of Sciences has established a laboratory to determine the physical properties of the soil at temperatures as low as minus 150 degrees, which is far lower than this planet ever reaches. In addition, 10,000,000 square kilometers of perpetually frozen ground are to be mapped and classified into temperature zones.

Auckland Prepares for Opening of Antarctic Encounter

by ALAN HARMAN

Travel Age West, Jan. 10, 1994, Auckland—New Zealand's hottest new tourist attraction is as cold as ice.

Kelly Tarlton's Antarctic Encounter, scheduled to open Jan. 25, is being billed as a frozen wonderland, and could be Auckland's—and possibly new Zealand's—most exciting entertainment experience.

The NZ\$10-million attraction is located along Auckland's waterfront adjacent to Kelly Tarlton's Underwater World, where visitors walk through aquarium display tanks inside specially designed tunnels. More than 5 million visitors have toured Underwater World since it opened in January 1985.

In the newest attraction, visitors enter a life-size recreation of the hut where Antarctic explorer Captain Robert Scott lived in McMurdo Sound in 1911 before starting his expedition to the South Pole.

Snowcat Ride

Visitors then board Snowcats—replicas of the vehicles used in the Antarctic—to travel through an authentic recreation of the frozen continent, right down to the below-freezing temperatures.

"We're providing a recreation of Antarctica that's as good as the real thing," said Antarctic Encounter General Manager Graeme Osborne. "When people look through the window of their Snowcat, they see an Antarctic landscape that's absolutely breathtaking."

The temperature in the exhibit is 20°F, but visitors travel in heated, nine-seat

Snowcats that travel along a guide track through real snow and ice. The ride includes steep inclines and tight corners—the same sort of conditions experienced by researchers and explorers in the southern continent.

In the real Antarctica, the weather is fierce—huge storms blow tons of snow and ice across the continent—and so it is at Antarctic Encounter. The moment the Snowcats begin their trek, they are plunged into the most feared of polar storms—a white-out with howling winds and pounding snow.

Once clear of this, visitors are taken through a live penguin colony where the occupants swim and play on the snow and ice, catch fish and look after their offspring.

Agents can reassure clients the penguins are being kept in an environment similar to their natural surroundings in the Antarctic. Exhibit management has gone to great lengths to ensure the penguins feel at home.

The temperature is kept at a constant -40°F, and the air and salt water are filtered to keep out potentially harmful fungal spores. The lighting was designed to replicate that of Ross Island in Antarctica, including sunrise, sunset, moonlight and the changing seasons.

The exhibit's inhabitants are King penguins obtained from the third generation raised in captivity at Sea World in San Diego. Future plans include adding Adelie penguins, also from Sea World, but these will not arrive for about two years.

Osborne said the visitors and Snowcats do not frighten the penguins. "Research carried out in Antarctica shows that penguins adapt very quickly to the presence of humans and machinery and after a short period of time tend to ignore both," he said.

Osborne said Kelly Tarlton's is very conscientious in the care of its animals and is constantly seeking to improve their environment. "We have carefully researched all of the moral, ethical and environmental issues

related to this project and are satisfied that neither our integrity nor our standards are being compromised," he said.

In the real Antarctica, where there are penguins, there are orcas—the area's most ferocious

sea mammal. A life-size replica of these killer whales has been created in the exhibit. The 660-pound polystyrene model with realistic movements lurks in a pool and, as visitors draw alongside, lunges over the roof of the Snowcat, grabs a life-like seal and drops back into the water, showering the Snowcat in the process.

If this scary experience isn't enough, the visitors "crash" through the ice for a close look at Antarctic marine life as the Snowcats trundle by a giant aquarium. Finally, the vehicles resurface at the futuristic Scott Base 2000. The display depicts people living on the frozen continent in the next century.

At the end of the tour is the Antarctic Encounter Exhibition Hall, featuring history and information about the world's last largely unexplored continent.

When the project was announced, New Zealanders dug out their own Antarctic memorabilia and offered it for the exhibit. "The part of the exhibit that's particularly benefitted has been the recreation of the Scott hut of 1911," Osborne said. "We've built the hut to recreate Scott's birthday party on June 1, 1911."

Scott's Equipment

"It was a scientific expedition and as such they had a fascinating array of equipment, which you now see on display, as well as the expedition sitting at their table with the pianola playing in the background for the birthday party."

The tour through Antarctic Encounter and Underwater World takes about 80 minutes. Wheelchair and disabled access is provided. Photography is allowed, but the use of flash bulbs or spotlights is prohibited because of the live wildlife on display.

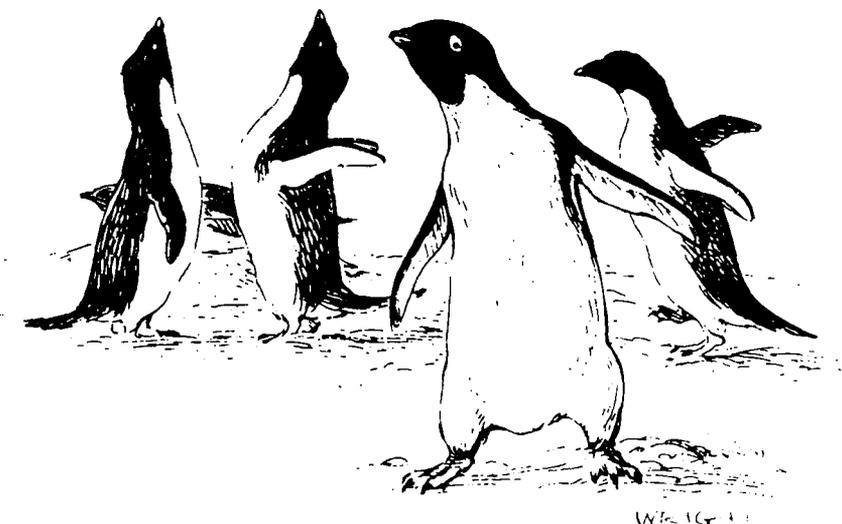
An added feature of the exhibit is that each group of visitors and their reactions during the tour are captured on a videotape, which is available for purchase after the ride.

"No special clothing is needed," Osborne said. "Antarctic Encounter is heated and Underwater World is dry."

Admission costs

Adult admission is NZ\$15 (approximately US\$8.25). For children under 12, the cost is NZ\$7.50 (US\$4.15), while children under age 4 are admitted free. There is a 10 percent discount for family groups of four or more. The admission price allows entry to both Antarctic Encounter and Underwater World. Hours are from 9 a.m. until 9 p.m., seven days a week.

Antarctic Encounter and Underwater World are on the route of Auckland's Explorer Bus, which provides transportation to the city's five main attractions. For NZ\$10 (US\$5.50) visitors can buy an all-day pass that allows them to board and leave the bus as often as they like.



Arctic Ice Rescue 1993

by ALSTON CALLAHAN, LM '64

The Explorer's Journal, Winter 1993— During the past five centuries, countless tragedies and many triumphs of Arctic travel and exploration have occurred. It has been incorrectly assumed that, with state-of-the-art icebreakers, ships in the Arctic can no longer be trapped. But in the late summer of 1993, the Arctic ice exhibited its awesome power, again disproving this assumption.

On Aug. 17, the diesel-powered Russian icebreaker, *Kapitan Khlebnikov*, sailed on schedule from Sondre Stromfjord for the "first ever" circumnavigation of Greenland.

Progressing up the east coast of Greenland, the ship found many open leads and made unexpectedly rapid progress. A surface ship had never before reached Cape Norris Jessup or progressed north of Beaufort Island. But reconnaissance from a Canadian plane, and also from a plane supplied by the Murmansk Shipping Company, advised that the ice was too thick for circumnavigation. Before the *Khlebnikov* could move on toward Spitsbergen, the Arctic ice closed like a vise. Around midnight of Sept. 1, the radio operator sent the following:

Urgent assistance needed to escort Kapitan Khlebnikov down part of the Lincoln Sea due to heavy ice conditions in this area. Most important to give immediate assistance, as many people on board, and we cannot put passengers or vessel at risk.

On Aug. 19, the nuclear-powered Russian icebreaker *Yamal* left Provideniya, Russia, and proceeded through the Bering Strait on a "routine" trip to Murmansk by way of the North Pole. Its reactors generate 75,000 horsepower to turn three propellers, one located centrally and one on each side. Each propeller has four blades of hardened steel, each weighing seven tons. On the outbound voyage from Murmansk to Provideniya, a propeller blade had broken off on a block of ice which had slid under the hull. However, navigation and forward progress with only two propellers remained easy in open water.

On the night of Sept. 1, the distress

message, as recorded above, was received as the *Yamal* was returning from its trip to the North Pole. The radio operator also reported that a diesel-powered Canadian icebreaker much nearer to the *Kapitan Khlebnikov* found it was inadequately powered for the rescue.

East of the Pole, Captain Smirnov of the *Yamal* immediately circled his ship to the right and headed directly for the stranded ship.

The ice was much thicker than it had been at the Pole, and the floes were enormous—200

feet and longer, 75 to 100 feet wide, and seven to 10 feet thick. All shapes and sizes of the ice were cracked and pushed aside as the *Yamal* moved forward. Reconnaissance advice from the *Yamal's* helicopters helped to plan the best way through the ice. At 1100 on

Sept. 4, in the distant mist, the *Khlebnikov* was sighted, with the coast of Greenland behind.

A helicopter from the distressed ship flew around the *Yamal* in welcome and, as the *Yamal* drew closer, the fog horn was blown, and the stranded passengers were seen to be whistling, waving and screaming with joy.

In late afternoon, the ships were lashed together and a gang

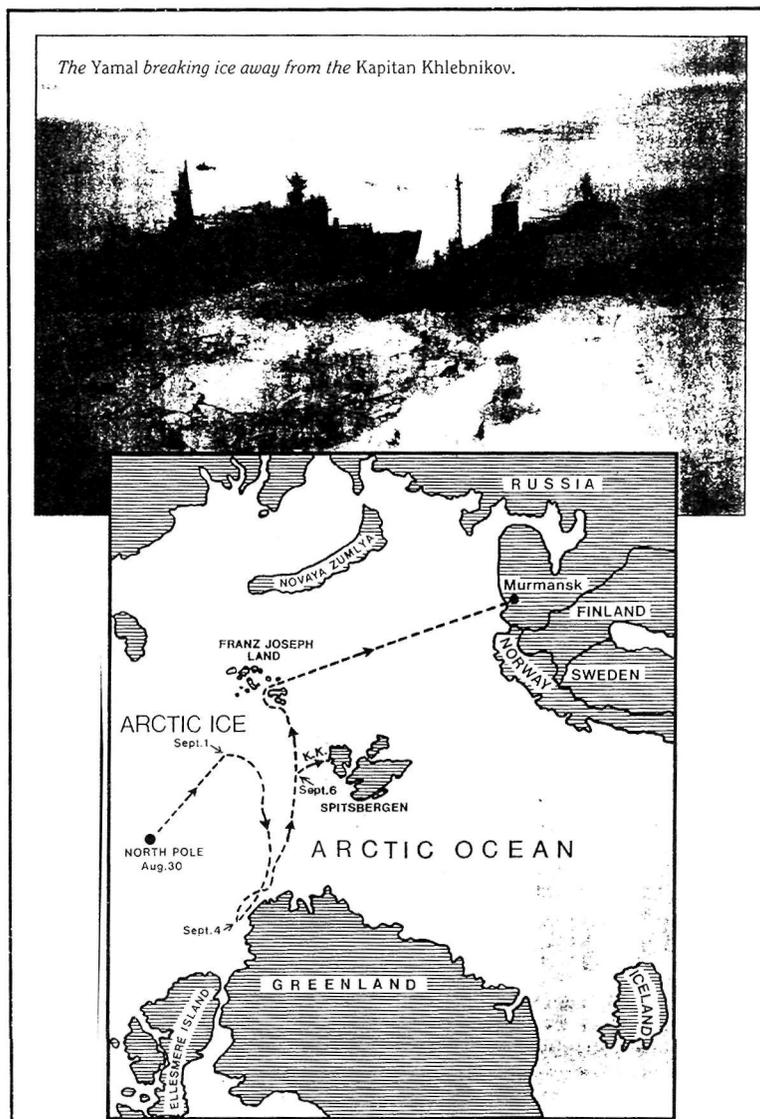
plank placed between the decks. The passengers came off the *Khlebnikov* and expressions of gratitude flowed from the rescued.

Around 1400, the hard work of freeing the *Khlebnikov* began. Back and forth, near the ship and then breaking away, the *Yamal* worked until the *Khlebnikov* was loosened. The *Yamal* headed through the Arctic ice in the

direction of Spitsbergen and Franz Joseph Land, the *Kapitan Khlebnikov* following in its wake. As the ships in the Arctic ice neared

Spitsbergen, the *Khlebnikov* tried to make it through the ice on its own, but was soon stuck again. The *Yamal* rescued it again in a few hours, so the *Khlebnikov* followed in its wake until outside the Arctic ice. Then it proceeded in open water to Spitsbergen.

... the ... passengers were ... screaming with joy.



ARCHAEOLOGY WATCH

Northern Exposition

BY SCOTT FABER

More than 6,000 years ago, on a bleak island in the Norwegian Arctic, Stone Age fishermen carved some of the oldest images of boats.

WITH THE ICY Arctic Ocean to their north and the Norwegian Sea to their west, Scandinavians have been known as hardy seafarers since at least the eighth century, when the Vikings first went marauding. But it now seems that the roots of the Scandinavian naval tradition go back much further—to more than six millennia ago. On an island off the coast of northernmost Norway, 250 miles above the Arctic Circle, archeologists have uncovered the most northerly collection of rock art yet known: carved images of Stone Age humans and animals, and Europe's oldest images of boats.

Archeologist Anders Hesjedal and his colleagues from Norway's Tromsø Museum announced the results of their excavation last year. At Slettnes on the island of Sørøya, Hesjedal's team found a scattering of small boulders bearing more than a hundred sparrow-size carvings of animals—reindeer, birds, elk, bear claws—and five images of boats. Each boat had a prow in the shape of an elk's head, and humans could be seen either in or close to the vessels.

The archeologists know roughly how old the images are from the layer of gravel that had covered the boulders. The gravel layer, which is found all along the coast of Norway, was deposited some 6,000 years ago, after the last ice sheets of the Ice Age had melted and the sea had reached its highest level. The carvings must have been made after the boulders were uncovered by the retreating ice but before they were covered again by the water and gravel. The boulders were raised to their present high and dry position by the re-

bounding land: freed from the depressing weight of the ice sheet, it has been slowly rising for the past 9,000 years.

Hesjedal thus estimates that the Sørøya images were carved between 6,000 and 9,000 years ago. That makes them the oldest known boat images in Europe and among the oldest in the world. (The boat drawers of Sørøya were certainly not the first boat *builders*, however; Australia was settled as early as 37,000 years ago by people who must have arrived in boats.)

Who were the early inhabitants of Sørøya? The answer is not clear. Ten thousand years ago, as the ice sheet covering Scandinavia began to shrink, northern Norway is thought to have

Certainly they were accomplished sailors, because their settlements have been found on islands even farther from the coast than Sørøya. And surely, says Hesjedal, they could not have survived on the occasional reindeer; they must have eaten fish and sea mammals, both of which are plentiful in the rich, Gulf Stream-warmed waters off northern Norway. Curiously, though, apart from two murky drawings that may represent whales, no sea creatures are depicted in the rock carvings from Sørøya.

"Until this discovery, the predominant theory about northern rock art was that it represented a Stone Age menu, a list of the foods people ate," says Hesjedal. "Yet we don't find those sea-based species in this art. Instead we find land mammals such as bear and elk, which were not an important part of the diet. That's why we think of the rock art as metaphors, symbols of something else, like totems." Indeed, some of the boats in the Sørøya drawings have reindeer in them, which suggests to Hesjedal that the artists were depicting a fantasy world—inspired, perhaps, by having come into contact with an inland community of reindeer hunters.

Hesjedal and his colleagues have found far more than rock carvings on Sørøya: scattered pieces of red ochre that might once have been used to color the carvings, remains of turf houses from later settlements, and arrow-

heads that are even older than the art. "On this small place," says Hesjedal, "we have documented continuous settlement during the past 10,000 years. This is a unique situation. It makes us able to study in great detail the changes that took place over a very long span of time." □



SØRØYA,
ca. 4000 B.C.: A
man and a
boat with an elk's-
head prow.

been colonized from two directions: from the east, by hunters from the Russian steppes who were pursuing migrating game such as reindeer, and whose rock carvings of reindeer have been found not far from Sørøya on the Norwegian mainland; and from the south, by people who made their way up Norway's ice-free west coast. At the moment there is no way of telling which direction the Sørøyans came from—or whether it was both south *and* east.

Russia is Pressed on Nuclear Waste Dumping

by DAVID E. PITT

The New York Times, Dec. 5, 1993—Three weeks after 37 countries approved a legally binding ban on dumping low-level radioactive waste at sea, Russia is coming under increasing diplomatic pressure to pledge a permanent end to the practice, especially in the arctic.

Although Britain, France, China and Belgium joined Russia in abstaining from voting on the ban and may decide to defy it, the effectiveness of the newly strengthened treaty—known as the London Convention—will hinge mainly on Russia's actions, diplomats and environmental experts agree.

There is concern that if Russia resumes dumping, as it has warned it may do, much of the material will end up in a disposal zone that the Russian military has been using for decades, off the archipelago of Novaya Zemlya in the Arctic Ocean. Many scientists view the Arctic ecosystem as particularly fragile and suspect that the movement of pack ice may play a role in spreading radioactivity and other pollution over vast areas.

There is also concern that radioactive waste may be affecting the health of Eskimos and other indigenous people for whom fish and marine mammals like seals and whales are important food sources.

"It's a pretty dismal picture," said Scott Hajost, a former State Department negotiator who is international counsel for the Environmental Defense Fund. "But the clear hope is that the spotlight now being turned on the Russians will have some impact on the dumping question."

There is also concern that radioactive waste may be affecting the health of Eskimos and other indigenous people for whom fish and marine mammals . . . are important food sources.

Under the rules of the London Convention, any of the 71 signatory countries has 100 days from Nov. 12—the day the total ban on dumping radioactive waste was approved—to file a formal objection to any treaty change, in effect reserving the right to ignore the new prohibition on low-level waste dumping. Unlike most countries with radioactive waste disposal problems, Russia is not already constrained from dumping by a separate regional treaty.

The Arctic is the last major geographic area that lacks a regional environmental protection agreement, and progress toward one has been slow.

Russia's Environment Minister, Victor Danilov-Danilyan, said this

month that while his government supports the idea of a total legal prohibition, it lacks the money and technical expertise to build enough land-based storage sites for its low-level wastes and will probably have to resume ocean dumping of those materials by 1995.

Some countries, especially the United States, assert that the Russians could abide by the dumping ban if they chose, they are trying to use concern over the marine environment to pry new assistance, especially hard currency, out of the west.

But other nations expressed willingness to examine Russia's case for new aid, particularly technical help in building storage sites, and called for an effort to try to distinguish what Russia wants from what it really needs.

In line with this, the London Convention signers—including the United States—agreed this month to form a team of experts to help Russia assess its waste-storage requirements, and called on Moscow "to provide appropriate access and support."

They also gave Russia until Feb. 1 to provide a description of its existing storage and treatment sites, and a full inventory of its low-level liquid waste—the vast bulk of it a by-product of the reactors that power its submarines and icebreakers.

Ban is Now in Force on Nuclear Dumping

The New York Times, Feb. 22, 1994—An international ban on the dumping of radioactive waste at sea came into force today, but Russia has made it clear it would not comply with the measures.

The ban follows an agreement reached in November by the so-called London Convention, a group concerned with the prevention of marine pollution by dumping of wastes.

Five nations—Belgium, Britain, China, France and Russia—abstained in the November vote,

though all but Russia have since indicated a willingness to abide by the agreement. But the International Maritime Organization, the London-based United Nations agency concerned with maritime safety and the prevention of pollution from ships, said Russia had pledged to "endeavor to avoid pollution of the sea by dumping of wastes."

Moscow, which has drawn international criticism over its dumping practices, has acknowledged dumping liquid and solid radioactive waste into Arctic and Asian waters over several decades.

Dues

Membership fees are due on the first of the year. Those of you who sent only \$10 in 1993 should have received two issues of *The Polar Times*.

To simplify collection and remind those whose membership has expired, we have included a self-addressed envelope with this issue. Please fill out the renewal form and submit your dues accordingly.

If you did not receive an envelope, your dues are up to date.

Your continuing membership and support are critical to the future of the American Polar Society.

Solo explorers survive, but they're on a very slow track to North Pole

by DOUG MELLGREN

The Washington Times, March 19, 1994—Norwegian Willy Gautvik, one of the four adventurers racing to be the first to reach the North Pole alone and unaided, has summoned a plane to rescue him, his spokesman said yesterday.

Another racer, Mitsuru Obha of Japan, was believed to have lost his skis, ruined his sleeping bag and thwarted a polar bear attack during his 40-below-zero trek. Norwegian Borge Ousland had been trapped by bad weather, and Scottish-born Rupert Hadow was struggling to make progress.

The four men, starting at different times and pulling sleds weighing up to 290 pounds, had each hoped to be the first to ski solo to the North Pole unaided. Others have made the trip alone, but always with assistance, such as sled dogs or outside supplies.

The winner, if there is one, could

reach the pole sometime next month.

Gautvik, 28, and two companions set out from Ward Hunt Island on Feb. 28 on a 480-mile trek to the pole. Last weekend his partners were flown out after one suffered frostbite, and Gautvik continued alone, hoping to compete in the informal solo race.

But on Thursday, he signaled that he wanted to be picked up, said Gautvik's spokesman, Ole Magnus Rapp, in the northern Norwegian town of Tromsø. Rapp said the coded signal, transmitted by satellite, did not indicate an emergency.

A plane was sent to pick up Gautvik yesterday, about 80 miles north of mainland Canada.

Hadow, 32, started March 8 from Ward Hunt Island. Norwegian newspapers said he had made so little progress it would take a year for him to reach the pole at his current pace.

"We're not sure how far he has

gone," said Hadow's spokeswoman, Andrea Lanzarotto.

Ousland, of Norway, and Obha, 40, of Japan, set out from Cape Mys Atkicheskiy, in Russian Siberia, about 620 miles from the pole. Obha left on Feb. 24 and Ousland on March 2.

Reports in Norway said Obha had lost his skis and ruined his sleeping bag, and requested replacements about 125 miles into his trek. If that is true, it would end his hope of making an unassisted trip.

His spokesman, Alexander Tenyakshev in Moscow, told the Oslo newspaper Dagbladet that Obha might have fallen into frigid water, but that a shortwave radio transmission from Obha was too garbled to be certain.

Tenyakshev also said Obha, the only racer without a gun, stopped an attacking polar bear by spraying repellent at it.

GLACIER UPDATE

The following is an update on the *GLACIER* article published in the spring edition of *The Polar Times*. The information and photo were provided by Mr. John Willard Jr. after a visit to the ship in August 1993.

The grand old ship is anchored with the federal reserve Fleet in Suisun Bay. Mr. Willard and three Coast Guard personnel boarded the ship, inspected and took a series of photographs to document her condition.

The outer hull of the ship is in outstanding condition. The Intervinex Red Paint (hence the name Big Red) is holding up well. Unlike ships with thin hulls that are displayed as floating museums the

hull, will never need to be drydocked for hull repairs - at least not for several hundred years. The interior of the ship, however, has been stripped of all historical features such as the wheel, binnacles, art work and photographs. Equipment such as radios, electrical apparatus and evaporators have been destructively removed. The science labs have been stripped of all support equipment. It will take a major renovation to restore the ship to museum status.

The *USS/USCGC GLACIER* AGB-4/WAGB-4 was commissioned on 27 May 1955 and made her final cruise to break out the channel at McMurdo in 1987. She was a well built ship

having withstood the wear and tear of 32 years of Arctic and Antarctic exploration. This fine old ship deserves a big "WELL DONE" instead of being relegated to a target ship by the U.S. Navy.



The Glacier, wasiting.

Diamond Rush

The *New York Times*, Feb. 15, 1994—Diamonds are travelers from the earth's interior. How they form there is well known. Crushing pressures and blistering heats work in unison to squeeze ho-hum carbon into stones of unrivaled hardness that can be shaped into dazzling gems. But how diamonds make their journeys of a hundred miles or more to particular spots on the earth's surface, and not to others, has long been a mystery.

Now, clues to a possible explanation have emerged in the Canadian tundra amid a rush for diamond riches reminiscent of the Yukon gold rush days of a century ago. Braving a riot of claims, finds and swindles, geologists have been carefully examining the rocky ground and discovering what may prove to be new indicators of diamond-bearing ores. These signs, dikes of ancient lava that are often visible on the earth's surface, could make future prospecting for diamonds easier.

The rush of prospecting centers on the Northwest Territories of Canada just south of the Arctic Circle, a rocky area of tundra dotted with frozen lakes and populated by wolves, caribou, arctic foxes and grizzly bears. Since 1991, when diamonds were first discovered there, more than 200 companies have

staked out claims over nearly 75,000 square miles, an area larger than the state of Wisconsin. It is the biggest mineral rush in Canadian history. The outback is alive with new roads, camps, airstrips and fuel dumps.

While some diamond experts are confidently predicting that Canada will be the next South Africa, whose mines have produced a large share of the world's diamonds, most of the activity so far has been exploratory. There are no mines, only pilot rigs drilling into icy rock for samples. To date, the big beneficiaries of the diamond euphoria have been outfitters, bush pilots, stockbrokers and scientists—again reminiscent of the Klondike gold rush.

According to Dr. Tom E. McCandless, a geochemist at the University of Arizona who studies diamond ores and advises prospectors, behind the hustles, hype and feverish speculation of the current craze was a body of evidence suggesting a major find. Rich ores and diamonds have already been found, he said, along with indications that the productive zone may extend over an ample part of the Canadian hinterland. "In the end," he said, "it will be the next major diamond-producing area on the planet."

Mount Vaughan

Norman Vaughan has postponed the Mount Vaughan Antarctic Expedition until December 1994.

The expedition had major difficulties since the team left Anchorage for Punta Arenas, Chile, Nov. 4. The most catastrophic was the air plane crash, Nov. 26. The expedition's veterinarian, Dr. Jerry Vanck, was severely injured and four expedition dogs were lost.

The expedition seemed to be back on track the evening of Jan. 4. Norman and Carolyn Vaughan, Vernon Tejas and Brian Horner left for Patriot Hills to continue the expedition without their heroic dogs. They arrived in Patriot Hills with great hopes for clear weather. The weather did not hold and Norman, Vernon, Brian and the National Geographic film crew were not able to leave Patriot Hills for the base of Mount Vaughan. They were unable to fly for 15 days because of whiteouts and blowing snow. It seemed in everyone's best interest to use whatever good weather was left to pack up the camp and leave for Punta Arenas, Chile.

Norman's spirits are good. He is looking forward to continuing this expedition next year. He is already planning his next assault and he has a sponsor. He will summit Mount Vaughan, named for him during the 1929 Byrd Antarctic Expedition, when he is 89!

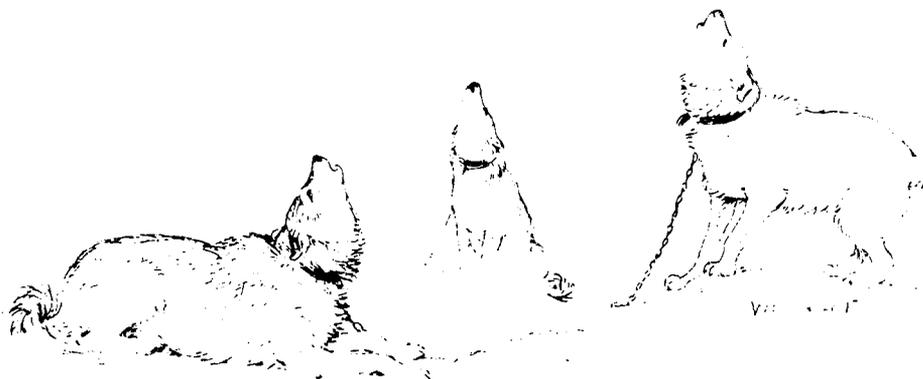
Dogs' Days End

The *New York Times*, March 13, 1994—Husky dogs have been pulling sleds in Antarctica since 1898. They accompanied Roald Amundsen and his men and pulled them to the South Pole and back—the ones that weren't eaten along the way. They frustrated Robert Falcon Scott before he died on his trek back from the pole. He preferred ponies.

In recent years, dog sleds have been used less and less, and now the last 14 dogs, kept by the British Antarctic Survey, have left the continent. The quest for ecological purity is the reason. By treaty, dogs are now banned from Antarctica, the reason being that they might introduce new microorganisms or viruses.

The last dogs made their final run across Alexander Island in February and flew out to the Falkland Islands. They are on their way, eventually, to an Inuit village on Hudson Bay, where

they won't be ecological outlaws because dogs and their wolf ancestors are indigenous there. The 14 dogs will then continue their working lives.



NOTE: *The Little America Times* was the forerunner and inspiration for *The Polar Times*.

Little America Times

No. 18.

FRIDAY, MAY 31, 1935.

Byrd Section

President Welcomes Byrd Home As Guns Boom Salute to Explorer

Additions to the Data of 22 Sciences Praised by Roosevelt as He Joins in Capital's Noisy Greeting to Expedition Disembarking From the Bear of Oakland.

By RUSSELL B. PORTER.

WASHINGTON, May 10.—Setting foot on soil of the United States mainland for the first time in nineteen months, Rear Admiral Richard E. Byrd received an enthusiastic national welcome when he landed with his crew late this afternoon on his return from his second Antarctic Expedition.

Guns roared, whistles screeched, aircraft soared, bands played, flags waved, soldiers and sailors drilled, and crowds cheered in a mass salute to the homecoming explorers as a background for the official reception.

A day of welcoming ceremonies began at 9:30 o'clock this morning when the party left the marine corps base at Quantico, Va., aboard the barkentine *Bear of Oakland*, supply ship of the expedition, to the tune of patriotic airs from a marine band.

It continued as the ship steamed up the broad Potomac past historic Mount Vernon and Alexandria, where throngs turned out to join the tribute from the river bank.

The high point came at 5 o'clock this afternoon, when Admiral Byrd and his men came ashore at the Washington Navy Yard for a Presidential reception. President Roosevelt went to the navy yard and welcomed them home on behalf of the nation, emphasizing in particular the achievements of the expedition in the study of polar meteorology as affecting world-wide weather conditions, and in other scientific subjects.

Governor Peery of Virginia welcomed Admiral Byrd as a fellow Virginian, and a Congressional delegation took part in the tribute.

The explorer in making his official report to the President announced that the expedition had obtained four times as much of scientific data as on his first trip to the Antarctic.

Tonight the admiral and his men were guests of the National Geographic Society at a dinner in the Hotel Willard and later at a reception in Constitution Hall. At the reception, Dr. Gilbert Grosvenor, president of the society, presented a scroll to the admiral in recognition of the expedition's explorations and scientific results. Admiral Byrd gave his first public address since leaving the Antarctic,

reporting on the scientific work of the expedition in various fields.

As the *Bear of Oakland* approached the Navy Yard this afternoon, a thirteen-gun salute boomed in Admiral Byrd's honor. The flashes from the cannon on one side of the river were matched by flashes of lightning on the other side.

The weather had been alternately clear and rainy all day, but as the supply ship came alongside the dock, the skies cleared and the sun came out, to remain shining for the entire Presidential reception.

On the dock were smart-looking sailors and Marines in dress uniforms, a Marine Corps band which played patriotic music, and a crowd of several thousand persons, including many relatives and friends of members of the expedition.

There were many joyous reunions as members of the expedition greeted their families. As an officer came down the gangplank his wife rushed into his arms, giving him a hearty kiss. Newspaper photographers observed this too late to record it.

They swarmed around the couple, urging them to repeat the kiss. Beaming happily, the officer and his wife responded with a wile, exchanging not merely one but two long kisses for the camera.

Mother Commands Sight of Son.

Meanwhile a gray-haired woman holding a little boy by the hand pushed her way through the marine guard to the gangplank. Her son was aboard the *Bear of Oakland* as a member of the crew, and was not allowed to go ashore for the moment. An officer tried to persuade her to join the rest of the crowd beyond the lines until the crew came ashore.

"I guess I've got a right to see my own son!" she protested indignantly, refusing to budge.

"He's here, all right," she was reassured.

"Well, let me see him," she demanded.

Not until her son, a middle-aged man, was brought to the rail, and threw her a kiss, did she consent to move back out of the way.

A few minutes before the President arrived, Secretary of the Navy Swanson drove on the dock and received a salute of nineteen guns.

President Arrives at the Dock.

President Roosevelt drove up in a big limousine flying the Stars and Stripes and the President's flag.

With him were his daughter, Mrs. John Boettiger, and her two little children, Sistine and Bussie. The President wore a gray suit, a soft collar and a gray fedora hat.

Admiral Byrd came to the rail of the ship in a white uniform, and stood at attention with the entire

Byrd Asks Philadelphia How to Doctor a Penguin

PHILADELPHIA, May 6.—Officials of the Philadelphia Zoo were appealed to tonight by distressed members of the Byrd Antarctic Expedition to furnish an answer to the question, "What do you do with a penguin when it won't eat?"

Several pairs are en route to the zoo from Little America. A radiogram requesting medical advice as to their care was relayed here from the expedition's New York office. Dr. Roderick MacDonald, director of the zoo, consulted Dr. Herbert Fox, pathologist, and then wired for further details.

The local zoo now houses four penguins of the South African variety, which appear to feel at home, but the Antarctic penguin, according to zoo officials, has never been kept successfully in captivity.

gathering as the band played the Star Spangled Banner immediately after the President's arrival. Then came the President's salute of twenty-one guns from the naval battery.

The President stood waiting on the cobblestones as Admiral Byrd led his crew, numbering about 100 men, down the gangplank and across the yard in single file. Beaming with his most genial smile, the President shook hands heartily with the Admiral and chatted with him for a few minutes in the centre of a group of official well-wishers.

Then each member of the expedition was introduced as they filed past the President. In the background stood Governor Peery and others of the official committee in formal afternoon clothes.

Byrd Reports to the President.

Stepping in front of the microphone, with the President by his side, Admiral Byrd opened the speechmaking by formally reporting the success of the expedition. He said:

"I herewith report to you, Mr. President, the return of the Byrd Antarctic Expedition II. Thanks to Providence, every man reached civilization safe and well. I regret to say that one man, one of our best, Ivar Tingloff, passed in New Zealand from a physical ailment contracted there after our return. Due to the unselfish and good work of my men I am glad to report that we have accomplished our scientific mission with its twenty-two-point program, having obtained four times as much scientific data as before."

THE PRESIDENT'S GREETING.

President Roosevelt then spoke as follows:

"Admiral Byrd, it is not the first time that I have welcomed you home. The last time was after the first Byrd Expedition when you, with some of your officers and men,

Continued on Following Page.

BOSTON GIVES BYRD A 'WELCOME HOME'

Admiral, in Disguise, Rejoins Ships for Triumphant Sail Up the Harbor.

BOSTON, May 16.—Greeted by booming cannon, shrieking sirens, roaring planes and the cheers of 200,000 Bostonians, Admiral Richard Evelyn Byrd was welcomed home today from his second Antarctic venture.

When his ships, the *Jacob Ruppert* and the *Bear of Oakland*, tied up at the navy yard at noon a modern odyssey of nineteen months came to an official end. The 112 members of the expedition, entertained tonight with their commander at a dinner given by Governor Cutley, will be discharged within a few days, twenty-seven of them returning to New England homes.

In consideration of the crowds that early gathered to greet him, Admiral Byrd, who passed Wednesday night in Boston, arose early and employed a whimsical ruse to join his men on the *Ruppert*, at anchor off Governors Island.

As a disguise, he put on smoked spectacles, adorned his clean-shaven upper lip with a flowing black mustache and donned a baggy old suit, in place of his trim blue uniform. His arrival in this masquerade startled the *Ruppert's* crew. Soon the real admiral emerged, however, and the triumphal procession up the harbor began.

Fireboats spurted cascading curtains of sun-glinting water, deep-throated whistles echoed over the harbor and finally a thirteen-gun salute roared at the navy yard.

Through flag-draped streets lined with cheering thousands the expedition was escorted under showers of confetti to historic Boston Common.

The sixty-seven sledge dogs barked joyfully and only the ten emperor penguins seemed doleful. The expedition's Yankee-bred cow grazed peacefully on the Common while 10,000 citizens acclaimed the seafarers at the Parkman Bandstand.

A silver swan vase and three silver candlesticks were presented to Admiral Byrd at tonight's dinner.

BOSTON, May 16.—A penguin couple attended the dinner tonight which Governor James M. Curley tendered to Admiral Byrd and his crew.

Introduced to the guests by the Governor as "Madam and Mr. Penguin," the two birds from the Antarctic sat throughout the dinner on a cake of ice ten feet square and four feet deep.

Admiral Byrd told of asking an Irish member of the expedition what he missed most while away from civilization.

"Temptation," was the reply.

BYRD IS WELCOMED BY THE PRESIDENT

Continued from Preceding Page.

came to the Capital of the State of New York and I, as Governor, had the privilege of conferring on you the Distinguished Service Medal of that State.

"And so once more I welcome you and your comrades on your return, this time not as the Governor of one State, but as the President of all the country. I do this with a sense of high privilege and for two very good reasons.

"The first is because of the close association and the very deep friendship that has existed between you and me for many long years; the second is because once more you have completed a successful expedition for the gain of human knowledge and the furtherance of the progress of civilization. It is no small thing to have filled in another large portion of the map of the world which had hitherto been a blank.

"It is an equally great achievement to have added valuable information in at least twenty-two separate branches of science. I have been especially interested in the meteorological data obtained by you and by your comrades in that Antarctic continent in which storms and weather changes originate, storms and changes that make themselves felt in many portions of the civilized and inhabited globe.

"To have carried these ship comrades to a dangerous outpost, to have developed your exploratory and scientific work through many months under the most trying of conditions, and to have brought them safely home to their country and to their friends is an achievement of which the whole nation is proud.

"And so, Admiral, I salute you and your comrades and I extend to all of you in behalf of the American people a hearty welcome home. And let me add just one thing from the heart: Dick, I salute you."

The President took off his hat as he said, "Admiral, I salute you," and he turned and shook hands with the admiral as he said, "Dick, I salute you."

At the end of his remarks, President Roosevelt introduced Governor Peery, who welcomed the admiral and his men on behalf of the people of Virginia.

ADMIRAL BYRD'S RESPONSE.

In his response to the President's welcome, Admiral Byrd said:

"Mr. President, there is nothing I can say that would properly express how we feel about your coming down here to meet us. This is the very moment of our arrival home. It marks the end of a long and uncertain journey. We are home at last and as we step ashore the first hand to grasp ours in welcome is that of our Commander-in-Chief.

"Could I have rubbed Aladdin's lamp and could have had my wish as to what kind of welcome I wanted for my splendid men and myself, my wish would have been to have our President welcome us home. My men join me in saying to you that this single act of yours is adequate reward for anything this expedition may have done for science.

"Few people, I believe, are really interested in science. That is perfectly natural, for science is generally very dry stuff, but if our President, the people's representa-



tive, appreciates what little we have done, then, as I have said, we have our reward.

"Mr. President, I am very glad that you have mentioned our old friendship, because if you had not good taste would have prevented my doing so, and I must admit that your combining friendship, my Commander-in-Chief, my President—there certainly would be something wrong with me if I did not get a tremendous kick out of that.

"It is good to be back again. A couple of years at Little America leaves no doubt in one's mind that Big America is a grand and glorious place to come back to. I think that perhaps the most outstanding thing that has happened to our minds as the result of our experience is to make us more enthusiastically aware of how very, very good it is to be an American.

"Mr. President, though we have been at the bottom of the world, we have not been without some sketchy information of happenings back here, and we have followed you with the keenest and most sympathetic possible interest. I am glad for this chance to tell you that every one of my men joins me in fervent good wishes for your well-being and your superb effort to lead this nation in the right direction. Again we thank you for meeting us and for your approval of our work for science."

The admiral also thanked Governor Peery for his greeting.

Admiral Meets Wife and Mother.

The ceremonies at the navy yard concluded with another Presidential salute of twenty-one guns and the playing of "The Star-Spangled Banner." Admiral Byrd then greeted his wife and mother. He had not seen his mother since October, 1933, when he sailed on the beginning of the expedition, but his wife had journey to New Zealand

to meet him and had come part way back to this country with him.

Admiral Byrd, his wife and mother, Mrs. Boettiger and her children left the navy yard with the President in his car at the head of a long automobile procession which carried the members of the expedition to their headquarters at the Hotel Willard. The procession traveled through the Capitol grounds and along Pennsylvania and Constitution Avenues, which were thronged.

Members of the expedition who had preceded Admiral Byrd home, together with newspaper reporters and photographers, motored from here to Quantico early this morning and went aboard the Bear of Oakland.

They found the Admiral cheerful and apparently in good health, with his face rounded out and deeply tanned, but still showing some signs of strain as a result of his experiences during his four and a half months' solitary vigil at the advance base more than 100 miles nearer the South Pole than the rest of the expedition at Little America. That was from March to August last year.

He nearly lost his life from exposure to cold and to poisonous fumes from an oil heater and a gasoline engine while he was all alone at the advance base.

The Admiral's hair was much grayer today than it was when he left America in 1933. It was neatly trimmed in contrast to the pictures showing him with his hair grown so long in back that it fell to his shoulders. The pictures were taken after a relief party joined him at the advance base last August.

Says Vigil Was "Lonely as Hell."

Admiral Byrd said that his health had greatly improved on his journey homeward and that he now felt

"fine."

"It was lonely as hell, of course," he said of his vigil at the advance base. "The absolute silence was the most striking thing, because of the absence of all life. It was different from the silence of the woods, because in the woods you find some living creatures. There was no sun, and the snow came up to the top of my shack. I had to keep digging it away to keep from covering me up altogether.

"I spent a large part of my time reading. I must have read eighty-five books—everything from detective and adventure stories to works of philosophy."

He explained that his reason for going to the advance base was to get meteorological data which might help in explaining whatever effects polar storms have upon weather in the rest of the world, with a view to improving long-range weather forecasting.

The base at Little America, he explained, was near the seacoast, and he wanted weather data further inland. He took with him meteorological instruments similar to those of the expedition at Little America and made a continuous record of wind velocity and direction, temperatures and other data throughout his stay at the advance base.

"There was a time when you thought you weren't coming out?" he was asked.

"Several times," he replied with a grim smile, but he declined to say anything more about his experience in the solitude.

He also refused to discuss the possibility of another Byrd Antarctic expedition some time in the future. The rest of his interview followed closely the lines of the address he delivered before the National Geographic Society tonight, which is reported in another column.

Announcements

USS GLACIER (AGB-4) Association

Reunion Date: Sept. 21-24, 1995

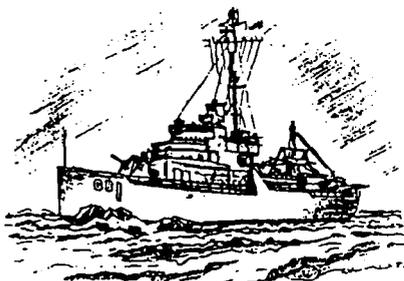
Site: Holiday Inn, Peabody, Mass.

Contact: James A. Tinch, 901 chestnut St., Livingston, TN 38570, (615) 823-7467. (See Glacier Update article.)

WIND CLASS ICEBREAKERS

Crew members from "Wind Class" icebreakers who have made trips to both the Arctic and Antarctic regions.

Contact: Bob Johnson, 241 Christian Ave., Stony Brook, NY 11790, (516) 689-6181



U. S. S. BURTON ISLAND AGB-1

USS BURTON ISLAND (AGB-1) Reunion Association

Reunion Date: Spring 1995

Site: Seattle, Wash.

Contact: Michael J. Bonner, 1034 Hemlock Ave., Imperial Beach, CA 91932

If you are planning a reunion, let us know as soon as possible so we can publish the details in a timely fashion. Better still, we will publish "inquiries of interest" in a reunion for members of polar expeditions. Then, after the celebration, we will carry an article with the details of the get-together.

Raptor's Revival: Arctic Falcon May Be Removed From Danger List

The New York Times, October 12, 1993—The peregrine falcon, once thought to be facing extinction, has rebounded so strongly that the Fish and Wildlife Service is proposing to remove its northern subspecies from the endangered species list.

The proposal applies to the Arctic subspecies. It nests in Alaska, Canada and Greenland and represents about 75 percent of the total population.

The turnaround in the bird's population has been attributed to the ban on DDT and efforts by state, federal and private biologists to reintroduce falcons around the nation.

"Here is real evidence that the Endangered Species Act does what it was intended to do—bring back species from the brink of extinction," Mollie Beattie, director of the wildlife agency, said.

The agency's recent proposal came nearly 23 years after the peregrine falcon was listed for protection under the Endangered Species Act. The Fish and Wildlife Service will accept public

comments on its proposal for 90 days before making a final decision.

The peregrine falcon is prized by falconers for its speed, grace and spectacular aerial dives of up to 200 miles an hour. With a wingspan of 40 inches, the 15-inch-long, dark-headed peregrine is the second-largest falcon in the United States.

The peregrine population was believed to have been down to about 2,000 by the early 1970s, because the bird's reproductive ability had been impeded by DDT consumed in the fat of smaller birds upon which it preyed. Government biologists believe there are now 5,000 to 10,000 adults.

"Clearly the bird has made a dramatic recovery throughout most of the United States," said Michael Bean, a wildlife expert at the Environmental Defense Fund, advocacy group.

He said that in cities across the country the bird is adapting to artificial habitats like the Golden Gate Bridge in San Francisco and high rises in New York and Boston.

Seeing the Arctic in a Museum

The New York Times, Sept. 19, 1993—Arktikum, a new museum-cum-science center in Rovaniemi, Finland, near the Arctic Circle, is designed to let visitors explore the ancient but still exotic Arctic environment and its hardy inhabitants.

Burrowed deep into the banks of the Ounasjoki River with only a long, completely glass-roofed, central arcade exposed, the structure containing Arktikum best tells its own story. "People in Lapland," explains Kati Kemppainen, Arktikum's spokeswoman, "have always sheltered themselves in the snow, underground."

The architectural result is stunningly handsome, instructive and in the arcade, even as high mounds of snow pile up outside it—blindingly bright and warm.

The building actually houses two

institutions: the provincial Museum of Lapland and an Arctic Center affiliated with the University of Lapland. The museum's exhibition area is divided into three sections: Sami, or Lapp, reindeer husbandry, other aspects of Sami culture and the history of Rovaniemi.

The Arctic Center has two lofty rooms of information spanning the entire Arctic region, including artifacts from varied Arctic peoples, dioramas and interactive geological and environmental exhibitions. There is also a beautiful Polarium Theater, with chairs of birch and blond reindeer leather, a café and a tiny gift shop.

Arktikum, 4 Pohjoisranta, telephone (60) 317 840, is open Tuesdays to Sundays from September until June 15, and daily in summer. Admission is about \$5.25.

The Bear

From the APS Secretary—I asked for advice on rescuing *The Bear* in the last issue. Surprisingly, the majority of the old Bear sailors wanted her to rest where she chose to go down. I humbly bow to those who are intimately familiar with the greatest of all American ships of polar exploration. I agree that we must leave her alone, but never forget her.

Captain R. B. Black, who sailed *The Bear* during her last Antarctic expedition, has written a fitting epitaph:

THE BEAR

by Richard Blackburn Black
Rear Admiral, USNR (Ret.)
Advanced Planning Division
Office of Naval Research

If wooden ships have hearts of oak,
and I believe they do,
I know of one whose stout heart broke!
I tell the tale to you:

The Bear, an ancient barkentine
Whose years topped eighty-nine
Was limping southward, old and green,
Upon a tow-tug's line.

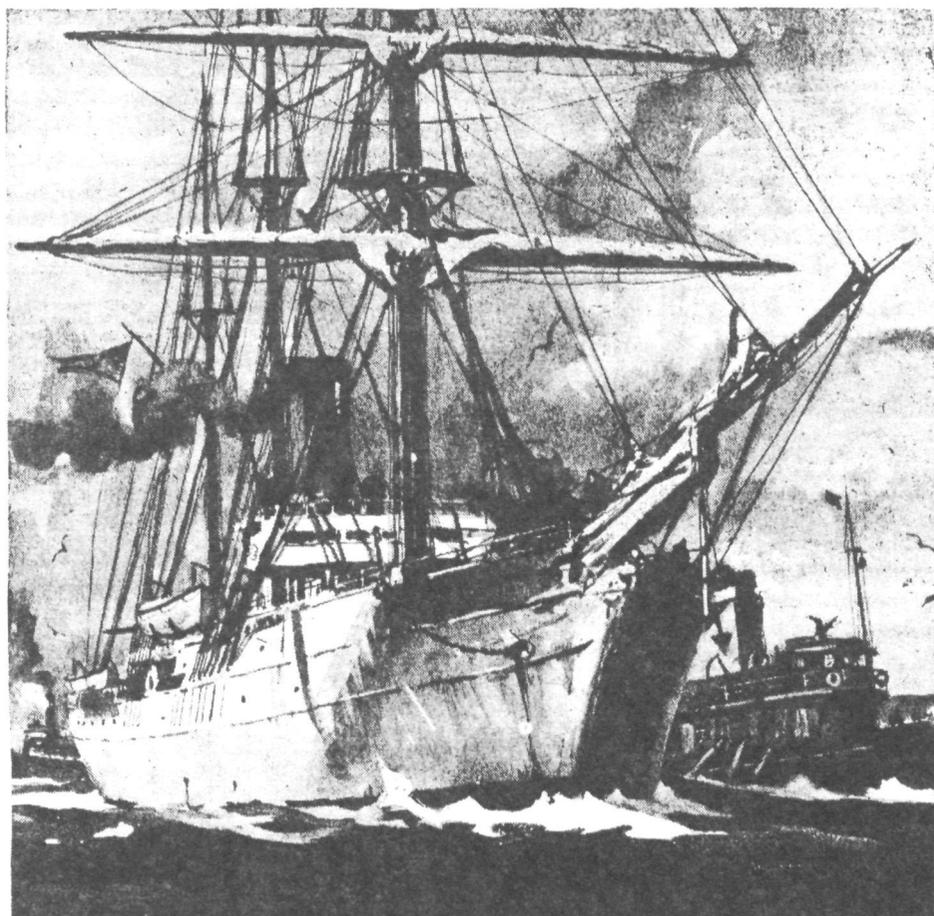
Her destination? "Shame!" she cried,
"I'm going to be a pub,
"A rest'rant (chicken? stewed or fried?)
A gin mill! There's the rub!"

She lay back on the cable, then,
And dreamed of all her past—
Of gales and ice and shouting men,
Taut canvas in the blast,

The shriek of wind, the sting of sleet,
The green seas sweeping back,
The clinging seamen with their feet
Braced on the foot-rope track,

With bellies pressed against the yard,
Chilled fingers clutching sail,
And elbow movement slowed and hard
By wind on raincoat's tail.

She thought of evenings still and bright,
Locked in Antarctic pack—
Ice-blink ahead and blue-black night
Behind her in her track.



When Byrd and English paced her deck
With anxious eyes ahead,
While Ben Johansen said, "by heck,
We'll push trou or ve're dead!"

Then Cruzen (now it's forty-one)
Fought through to Biscoe Isles
To free the men on Stonington,
One hundred forty miles.

Of ice-locked sea *Bear* could not break,
So in a patched-up plane
The East Base men—a chance to take—
All reached the ship again.

Her years of aid to Barrow town
And starving Aléuts,
And murderers at her yard-arm
A-hanging in their boots.

Now, back to present, and the gale
Off Nova Scotia's shore:
The seas run high, the tug men pale,
"Old *Bear* can't take much more!"

Old ships have souls, some sailors say,
And some have died of shame.
I'll not contend this, either way,
And I will place no blame.

But tell you just what seamen saw
Aboard that towing ship;
The Bear heaved back, began to yaw,
Her bow commenced to dip.

Then with a muffled, mighty sigh,
Her seams all opened wide,
And with her colors gaff-tip high,
She plunged beneath the tide!

"West Over Sea," the Vikings said
When funeral was planned,
With chieftain lying midships, dead,
Full armored, sword in hand.

I'll always feel, as some will voice
Who worked that ship with me,
That she went down by her own choice—
The Bear—West Over Sea!

For those of you who would like to know more about *The Bear*, we recommend reading *The Sea of the Bear* by LCDR M.A. Ransom, USN (Ret.), U.S. Naval Institute Press, 1964.

BOOK REVIEWS • BOOK REVIEWS • BOOK REVIEWS

Photographer to the Bears

by *Barbara Nielsen*

Unmindful of the biting cold, photographer Dan Guravich winds ribbons of film through his camera as two huge polar bears play-wrestle in the snow. As always, Guravich's pulse quickens at the sight of the powerful animals.

The award-winning wildlife photographer has filled his lens with caribou, walruses, muskoxen, and snowy owls. But he's best known for the polar bear, a mammal he has lovingly captured on film during nearly 50 trips to the Arctic. "I never tire

of watching them," says the Mississippi resident. "They're playful, intelligent—and full of surprises." It comes as no surprise, then, that Guravich is founder of "Polar Bears Alive." The nonprofit organization will monitor the five nations in which polar bears are found—Canada, Denmark, Norway, and Russia, along with the U.S.—to ensure they preserve adequate bear habitat and keep hunting to a minimum. A research center is in the plan as well. For more information, write Polar Bears Alive, 1000 Franklin Ave., Garden City, NY 11530.



How the East Was Won

by *ORLANDO FIGES*

The New York Times, Jan. 16, 1994—*The Conquest of a Continent: Siberia and the Russians* by W. Bruce Lincoln. Illustrated. 500 pp. New York: Random House. \$30.

The Russian conquest of Siberia, rather like the American conquest of the West, was a formative moment in the making of a nation. Just as the spirit of America was in part defined by its pioneers in the West, so that of Russia was defined by its conquest of the East. Many of the basic features of the Russian state reached their perfection (or imperfection) in Siberia. Nowhere else were its rulers so lawless, its customs so barbaric or its prisons and industries so vast and destructive. This was not so much a place as a state of mind.

Lincoln, a professor of Russian history at Northern Illinois University, begins his book with the early geographic exploration of Siberia, which is two million square miles bigger than the United States. It is a wonderful story, perfectly suited to Lincoln's narrative style. As early as 1648 the celebrated explorer Semen Dezhnev sailed around its far northeastern tip, thus effec-

tively proving that Asia was separate from North America, though at the time he had no idea of the importance of his discovery. Nearly a century later, Vitus Bering sailed through what is now called the Bering Strait and into the Gulf of Alaska. The 50th state was originally colonized by the Russians as a new base for the hunting of sea otters, whose precious pelts had become scarce in Siberia. In 1867, when the animals had been virtually wiped out, Alaska was sold to the United States for \$7 million.

In *The Conquest of a Continent*, Lincoln tells very well the story of Siberia's subjugation through several hundred years, beginning at the end of the 16th century. There is much to enjoy in his colorful narrative. But he does not tell us much about the impact of that conquest on the history of Russia as a whole. Nor does he say much about its impact on the indigenous Siberians—the Buryats, Yakuts, Kirghiz, Oroks, Chukchi and dozens of other hunting, fishing and nomadic peoples—despite a growing literature on this subject. This is like a history of the American West without the American Indians.

Silas: The Antarctic Diaries and Memoir of Charles S. Wright

by *BRIAN SHOEMAKER*

Silas: The Antarctic Diaries and Memoir of Charles S. Wright. Edited by Colin Bull and Pat F. Wright: Ohio State University Press, 1993. 396 pp, numerous illus. bib. Hardbound. U.S. \$59.00.

All who are familiar with sir Robert Falcon Scott's last expedition to Antarctica and his party's tragic death returning from the South Pole will enjoy this book. It is a collection of journals, memoirs and letters that tell the story of the expedition as seen through the eyes of an expedition scientist, Charles "Silas" Wright—a book that portrays the human side of expedition members, lovingly compiled by its editors.

Bull and Wright intertwine excerpts from the memoir with text of the diaries and highlight these with editorial remarks to enlighten the reader on the vernacular of the expedition and the time as well as explain those things that were not then understood. The story carries the reader along on scientific field parties and marches him with the support party to the Antarctic plateau and back to McMurdo Sound. These experiences are enhanced by the artwork of Wright, who illustrates every page with original drawings of expedition activities and scenes of natural phenomena of Antarctica.

Bull and the reader march south from McMurdo Sound with "Silas" and others in the spring of 1912, looking for the expedition that did not return before the sun went down. The feelings of the search party are captured when Silas finds Scott's camp and while they reverently open the tent and expose the frozen bodies. Their decision to leave the party's remains intact and erect a cairn over the site as "a slight token to perpetuate their gallant and successful attempt to reach the Pole" is experienced. The reader is there for the erection of a memorial cross on Observation Hill, facing south with the inscription from Tennyson, "To seek, to strive, to find and not to yield."

An outstanding read!



Antarctic Death Ends One Olympic Dream

by **SIOBHAN MCDONOUGH**

The Washington Times (Buenos Aires), Feb. 6, 1994—TEAM ENDS SOUTH POLE SEARCH:

A private expedition in Antarctica ended abruptly after a Norwegian explorer plunged to his death in a 160-foot crevasse while searching for a tent left by the first man at the South Pole, Roald Amundsen, 83 years ago.

The Norwegian was part of a nine-person team lead by explorer-glaciologist Monica Kristensen, who attempted to recover a small silk tent, equipment, a letter and a 12-foot wooden sledge left by Amundsen Dec. 14, 1911.

The team planned to locate and excavate the tent, which they thought was buried in about 36 feet of snow and ice, excavate it and transport it to Canada's Institute of Archaeological Textiles in Ottawa for a touch-up before sending it to Norway. The tent was to be exhibited at the Winter Olympics in Lillehammer.

The Aurora Project was sponsored partly by the Lillehammer Olympic Committee.

Amundsen left the tent as a signal for a British expedition led by Capt. Robert Falcon Scott that had not arrived at the pole. Scott's group found the sledge and tent, took a letter addressed to King Haakon VII and a small spirit lamp, but never reached the coast.

A rescue party found the dead group's camp, and the royal letter finally made its way to Norway. But another letter probably written to Scott by Amundsen remains in the tent.

Kristensen's ambitious project was called off when the mission's chief of operations and Kristensen's No. 2, Norwegian Army Capt. Jostein Helgestad, 35, fell Dec. 27 through a bridged-over crevasse about 1,000 miles from the South Pole. He and three others had gone to the crevasse in search of the tent.

According to a report, Kristensen's team traveled rapidly on their snowmobiles across a heavily crevassed field and was equipped inappropriately for the trip.

Nine rescue-team members flew

more than 1,200 miles from McMurdo Sound, across the icebound continent, only to discover that their ski-equipped LC-130 Hercules aircraft was too heavy to land on the plain.

After returning to Amundsen-Scott South Pole Station to revamp their plan, half of the rescuers set off in a lighter, twin-engine Otter plane that landed 1.1 miles from the rescue site.

The rescuers roped themselves together and proceeded on a difficult six-hour trip, falling into crevasses 20 times before reaching the Norwegian party's tents.

The couldn't recover the snow-covered body of Capt. Helgestad, which was tightly wedged into an 8-inch gap about 130 feet below the surface, the report says.

Kristensen, who was completing scientific investigations at Norway's Bluefields Station when the death occurred, immediately called off the expedition and returned to Norway.

Old Issues of the Polar Times

FROM THE SECRETARY—There has been a demand for old issues of The Polar Times by some of the members of the American Polar Society. We have delayed our response until we have had the opportunity to inventory the files at the Byrd Polar Research Center at Ohio State University.

The inventory reveals that we are short numerous issues from No. 1 to No. 25 and issues No. 43, 44 and 100. If anyone has copies of the above issues, we would appreciate the donation to the APS so that we may complete an archival set to be maintained at the Byrd Polar Center.

With a few exceptions, we can only offer photocopies of the above issues to the members of the society. However, we do have sufficient extra original copies of all other issues and intend to make them available to the APS membership in the near future.



Designed by Della Weston

Attention, Polar Society Members:

We want to know if you are interested in having a Polar Society lapel pin. We have come up with a design that includes the polar-bear-and-penguin drawing that made up our very first cover in 1935. Our winter 1993 issue also featured this as its cover.

Please send us your ideas and comments on this pin design, and if you have any ideas for a different design, these would be welcome, too.

Thank you!

The Lost Squadron: Six P-38s Lost in 1942 to be Resurrected

by RICHARD L. TAYLOR JR.

The Explorers Journal, Winter 1991— On July 15, 1942, six P-38F Lockheed Lightning fighters and two B-17E Boeing bombers left Sondre Strom Fjord, Greenland, on their ferry flight to the war zone in England. Their last stop before their destination was to refuel in Iceland. As they neared that country's coast, they were enveloped by extremely bad weather and turned back to land in Narsarsuaq, Greenland, 500 miles west. Radio communication informed them that that field was shut down when, in fact, the weather was clear. It was later learned that the radio transmittal was from a pack of hostile



German U-boats intent on destroying what was fast becoming the Lost Squadron. The pilots, unaccustomed to the winds of the jet stream, found themselves not on the west coast of Greenland as planned, but on the east. Their fuel running low, and with nothing but snow in sight, they were forced to land on the icecap on the southeast coast of Greenland. They bellied in with minimal damage to the new (+/-

50 hrs.) planes and with only minor injury to one of the 25 crewmen. They came to rest within a radius of one half mile of one another and 10 miles from the coast. Their SOS signals were heard; a fix was made on their position and supplies were dropped on the third day. They camped in the B-17s for nine days until a dog team was sent in to lead the pilots to the coast, where a Coast Guard cutter picked them up.

In the 1970s, the incident was revived through a chance meeting between Colonel Carl Rudder, one of the P-38 pilots, and Roy Deegan, a commercial airline pilot. Rudder related the details as he remembered them and set in motion an opportunity of a lifetime for aviation buffs and adventure seekers.

In 1981, Pat Epps and Richard Taylor, both of Atlanta, formed the Greenland Expedition Society Inc., with the express goal to locate, excavate, salvage and return the aircraft to the United States. They traveled to the Greenland site only to discover that the planes were under an undetermined amount of snow.

Eventually, GES obtained the search and salvage rights from the Ministry of Greenland. Before those rights were granted, additional independent parties had made the long trek to Greenland in an attempt to pinpoint the location of the downed planes. Epps, Taylor and Colonel Norman Vaughan made four trips altogether to locate the planes, without success. Those four expeditions combined days of research into government records, interviews with pilots, use of subsurface radar and magnetometers and photographs and a good amount of seat-of-the-pants logic. Finally, it all led to an incredible breakthrough.

The 1988 expedition was to bring them long-awaited success. Using a low-frequency, side-scanning subsurface radar developed by Dr. Helgi Bjornsson of the University of Iceland, along with the latitude and longitude coordinates from the pilots' logs, the group found the first aircraft. Within days, all planes were precisely located.

In addition to Dr. Bjornsson's subsurface radar, the expedition also relied on a higher frequency subsurface system operated by Austin Kovacs of New Hampshire's Cold Region Research Engineering Laboratory. To further confirm their find, they used a magnetometer and a metal detector. A high pressure stream probe was

used to penetrate the layers of ice and snow and ultimately touch one of the aircraft. Electronic devices were spaced at each location to assure accurate re-identification.

Upon returning to the icecap in July 1989, the planes were again located and two borings were made into what was calculated to be the accessory section of number four engine on the B-17 "Big Stoop." The primary goal of this expedition was to return with tangible proof of the aircraft in order to satisfy the terms of agreement with the Danish government for the extension of the rights of search and salvage. The pieces retrieved satisfied those terms.

Historically, it is especially important to recover the six P-38s, as they are only five in flying condition in the world. The ice and snow have perfectly preserved the aircraft, and it is believed that they can be field-repaired, serviced and flown off the ice.

The first P-38 was brought to the surface in pieces in the summer of 1992. The others will await their resurrection.

The ice and snow have perfectly preserved the aircraft, and it is believed that they can be field-repaired, serviced and flown off the ice.

YOUNG EXPLORER'S PAGE

Crossword Puzzle

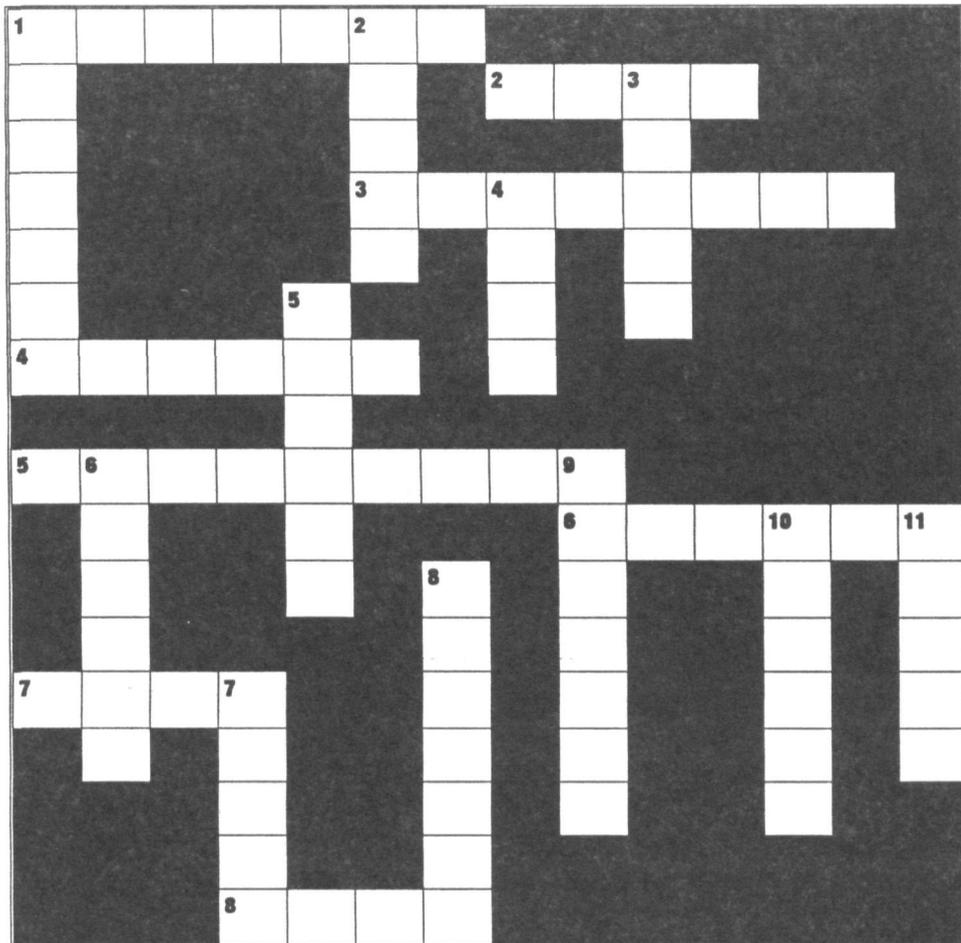
ACROSS

1. Eskimo shoes
2. Killer whale
3. Suicidal rodents (live on 10 Down)
4. Eskimo boat
5. Shackleton's ship
6. A blubber delicacy
7. First man to sail into the Antarctic circle
8. Second largest penguin

DOWN

1. Largest Antarctic station
2. Antarctic shrimp
3. Country closest to Antarctica
4. "Go" (in "dog" language)
5. Most northern U.S. town
6. Polar bear's Eskimo name
7. Dog's Eskimo name
8. One of the first polar industries
9. The largest penguin
10. Arctic grassland
11. Small eskimo boat

(Solution, page 23)



Did You Know . . .

. . . that a polar bear is actually black? Its fur consists of colorless hollow tubes that pass the heat of the sun to its black skin, where the heat stays. The white appearance of a polar bear comes from the sunlight that is reflected off of the fur.

Other polar bear tidbits . . .

A polar bear will track, kill and eat a man.

A polar bear will weigh only about one pound at birth and, when full grown, can weigh up to 3,000 pounds!

A polar bear can swim up to 100 miles non-stop when hunting.

What's The Time . . . ?

Q. How is time kept at the North Pole?

(Answer page 23)

Obituaries

SIDNEY G. HARTSHORNE

Sid Hartshorne died on Dec. 3, 1993, after a long bout with prostate cancer. He was a man who loved the sea to the very end, reports his wife Betty.

He was born on Aug. 29, 1911, in Bridgeport, Conn. He was raised a sailor in a family of sailors that spanned many generations. Originally he became a news photographer and was picture editor of *The Providence Journal* in Rhode Island. However, he returned to the sea, which became his lifelong love and dedication.

During World War II, he "captained" army freighters off of the New Guinea Coast, where he saw plenty of action. While there, he became interested in Polynesian outriggers. As a result, in 1949 he designed and built a 70-foot sailing catamaran, *Tropic Bird*—one of the first modern outriggers. In the early 1960s, he built the *Tropic Rover*, a 150-foot catamaran on which he chartered sailing excursions from the Bahamas.

He was selected to be the first master of the R.V. *Hero* in 1967. He sailed the *Hero* on her first sea trials to the Grand Banks

in August 1968. Due to these successful trials, he took her to the Davis Strait in the Arctic to test her in the ice. Afterward, he took her on a goodwill cruise to Washington, D.C., where the staff of the National Science Foundation was first able to inspect their vessel. From there it was on to Chile for some oceanographic work before sailing her to the Antarctic. The *Hero*, with Sid in command, first crossed the Antarctic Circle on Feb. 7, 1969—thus beginning the ship's 17-year saga of adventure and scientific research in the South Polar region.

After four seasons in the Antarctic waters, Hartshorne left the *Hero* to take command of the *Columbus Islin*, an oceanographic research vessel belonging to the University of Miami. He retired from the sea in 1978.

He is survived by his wife, Betty; a daughter, Deborah Niskin; and four grandchildren. His ashes were spread on the sea where his heart and soul sail on.

ROBERT PEARY JR.

The New York Times, March 12, 1994—Robert E. Peary Jr., an engineer and outdoorsman, died on Wednesday, March 9, in Sarasota, Fla., at the

home of his daughter, Josephine Peary, who lived in Augusta, Me., was 90.

He died of cancer, said his son, Robert E. Peary III of Augusta.

The elder Peary was the son of Robert E. Peary, the Arctic explorer who, in April 1909, became the first to reach the North Pole.

Peary Jr. also worked as an engineering inspector for the state of California during the construction of the Oakland Bay Bridge. He worked for 15 years for the state of Maine, designing bridges and fish ladders, which allow salmon and other species of fish to pass over dams and waterfalls as they try to reach spawning sites upstream.

Peary was a graduate of Bowdoin College in Brunswick, Me., and Lehigh University in Bethlehem, Pa. He and his late sister, Marie Peary, donated Eagle Island in Casco Bay, the Peary family's summer home, to the state of Maine as a memorial to their father, who retired from the navy as a rear admiral in 1911 and died in 1920.

In addition to his son and daughter, Peary is survived by a half brother, Kali Peary of Qanaq, Greenland, and two grandchildren.

Letters from Readers

Dear Editor:

I read with great interest the piece in the Fall/Winter issue of the *Times*, titled "Alfred Johnston and the *Bear*."

I was particularly intrigued with the photograph of the stern of the *Bear's* hull. The photograph raised a question that some Society member familiar with the hull design of ships designed for polar waters may be able to answer; that is, why does the *Bear* have square chines?

I have long thought that "ice" ships of the late 1800s, and certainly into the 1900s, had soft chines so that when pressure was exerted as ice closed on the hull, the ship would be lifted from the ice, thereby relieving the crushing pressure.

From the referenced picture, it would appear that the *Bear's* lines are the very antithesis of those professed by naval architects of the time as being required for a ship to survive being seized in the pack ice.

We use *The Polar Times* as a source of material used in producing orientation books that are issued to every person who goes to the Arctic with us, the purpose, of course, being to acquaint Odyssey participants with some of the elements that they will experience, whether it be the history of the exploration, culture, politics, Inuit culture or the natural sciences, to name a few.

Skip Voorhees
Arctic Odysseys

Dear Editor:

There were 22 of us "polecats" (13 Navy, 9 civilians) who wintered at Pole Station from Nov. 1962 to Nov. 1963. It remains a highlight of my life!

Thanks for helping keep *The Polar Times* alive!

Harry R. Spohn
OAE Deepfreeze '63

Dear Editor:

I'm delighted to see *The Polar Times* back in print again and wish you success.

Marcia E. Root
Buzzards Bay, MA

Dear Editor:

I definitely do not want to see the *Bear* "rescued." Once "rescued," she would just sit and rot away. It is comparatively easier to "rescue" a ship than to preserve and maintain her. Once a ship is "saved," most everyone believes that any further money or work is not required. Not so!

I hate to be a wet blanket, but as a volunteer over the years on the *Balclutha* and other ships, I have seen too many ships waste away to want that to happen to the *Bear*.

Gordon H. Fountain
Oakland, CA

Dear Editor:

I fully support any efforts to rescue the *Bear*. I first became interested in the *Bear* from Admiral Byrd's books. Now I own four or five books that are devoted to the history of the *Bear*. So count me in.

RMC Billy-Ace Baker
USN (REt)
Pensacola, FL

A New Center in Reedsport, Ore., Tells the Story of Land and Sea

by JOHN GRIFFITH

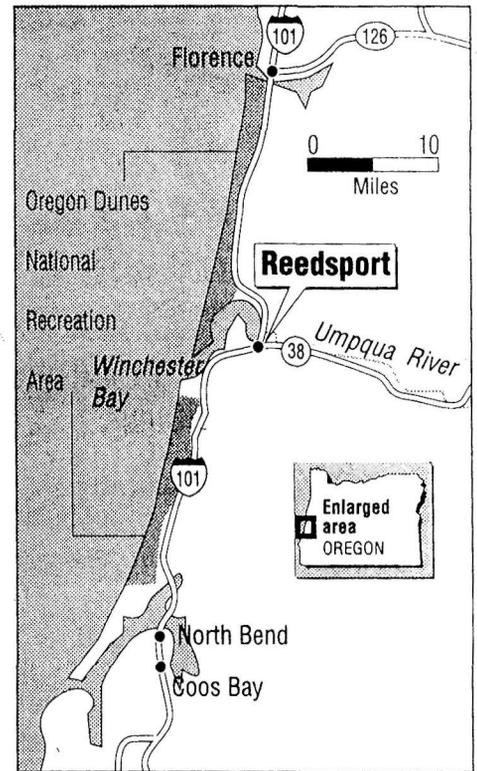
The Oregonian, Jan. 2, 1994—Exploring the polar regions: Floating on the river outside the Discovery Center in Reedsport, Ore., is a sailing ship, the 125-foot polar research vessel *Hero*. How the ship came to Reedsport, a temperate climate, after a working life in the frozen regions of Earth is a story in itself.

The short version is that it almost got turned into a restaurant. Now it's the cornerstone of a project to build a national showcase for polar exploration. Telling the details would spoil discovering them in the Discovery Center's Antarctic Experience wing.

Among the fun facts is that Antarctica is the greatest place on Earth to hunt for meteorites, and what makes it so.

A statue of polar explorer Admiral Richard E. Byrd greets Antarctic wing visitors. The long-range plane, explained in displays, is to build a Richard E. Byrd National Antarctic Center in Reedsport. It will showcase the aircraft, gear and heroics used to explore the poles. Reedsport plans to put it all in a geodesic dome such as the one at the South Pole and put the dome in the same set of boardwalks as the Discovery Center.

Editor's Note—After reading about the New Zealand Antarctic Encounter, which has captured the ambiance of the Antarctic environment (see page 8), we strongly endorse the Hero Foundation's initiative to develop a similar encounter in the United States. We wish them well and encourage the support of the membership of the American Polar Society. Contributions can be mailed to Hero Foundation, Box 73, Reedsport, OR 97467.



The Oregonian

Great Climate Cycles Seen in Last Ice Age

by Walter Sullivan

The New York Times, Feb. 1, 1994—In a burst of new discoveries, climatologists are beginning to reconstruct a recurring cycle of events that changed the face of the world several times during the last great ice age.

Each of the proposed new cycles seems to have included the buildup of a North American ice sheet whose central region was two miles thick; a series of warming fluctuations in the world's temperature, followed by the breakup of the ice sheet into armadas of icebergs that invaded the North Atlantic. These cycles occurred at least five times during the last ice age, which lasted 100,000 years and ended some 10,000 years ago.

One of the earliest clues to these great events came in 1988 with the discovery of six layers of tiny stones in cores drilled through the ooze on the bottom of the North Atlantic. The researcher, Hartmut Heinrich of the German Hydrographic Institute in Hamburg, had studied 13 cores of bottom sediment extracted from under 13,000 feet of water from a small area west of France. The same six layers occurred in most of them and were, he thought, dropped by the armadas of icebergs from Canada.

Before they broke off from the continental ice, the icebergs had scraped up rocky debris from land beneath the ice, then deposited it as "dropstones" when they melted over this spot.

That icebergs sometimes drifted this far

did not seem very remarkable, but now layers with identical composition and spacing have been found at a dozen sites spanning the entire Atlantic from Labrador to Europe. They testify to great armadas of icebergs that, in intervals some 5,000 to 10,000 years apart, suddenly invaded the ocean in vast numbers.

The sites are confined to a broad zone that presumably marks the drift path of the icebergs from the Labrador Sea southeast to the latitude of Portugal. Sea floor sampling north as well as south of that path has failed to show evidence of the "Heinrich events," as these iceberg invasions are now called.

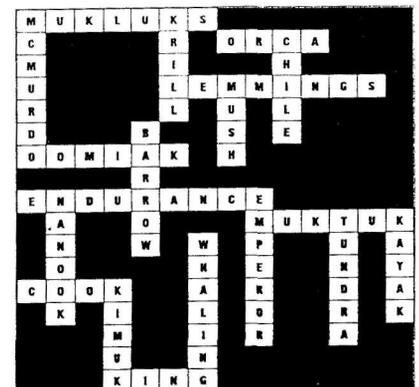
The Heinrich events have turned out to occur in step with other ice age cycles. One of these is a series of sudden warmings in climate, indicated by the ratio between two oxygen isotopes in the annual layers of snow packed into the Greenland icecap. The ice core data have shown that every 500 to 2,000 years during the last ice age the climate apparently warmed abruptly, then gradually cooled back to full ice age conditions.

That these events may have also been felt in the Antarctic has been reported by Dr. Todd Sowers and Dr. Michael Bender. They believe they have found nine such sudden warmings in the temperature record preserved in ice extracted by the Russians from their deep drill hole at Vostok. But efforts to date them have been imprecise because the annual layers there are too thin to count.



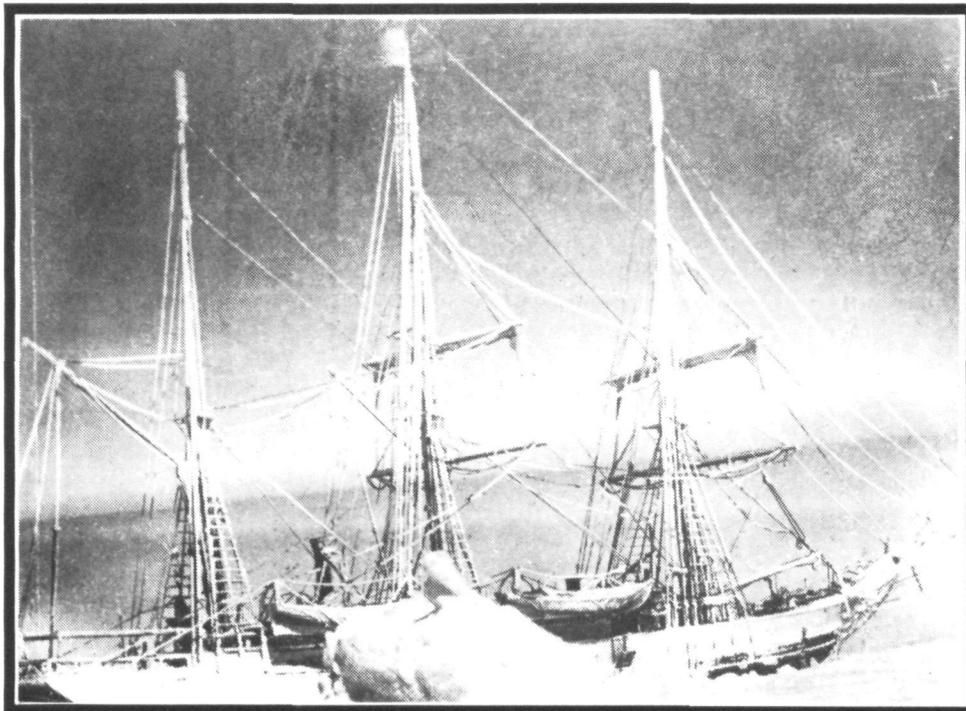
Answers from Page 21

A. It isn't. Those who go there usually observe the time zone of their points of departure.



BELGICA EXPEDITION

1898—Cook and Amundsen

*Belgica* Stuck in Ice—1898

Dr. Frederick A. Cook and Roald Amundsen were members of the Belgian Antarctic Expedition of 1898 or 1899, led by Adrian de Gerlache. The expedition ship is shown here beset in "the ice" during the winter of 1898—the first "winter-over" in Antarctica. Cook later went north and became one of the claimants to have discovered the North Pole. Amundsen was first to stand at the South Pole.