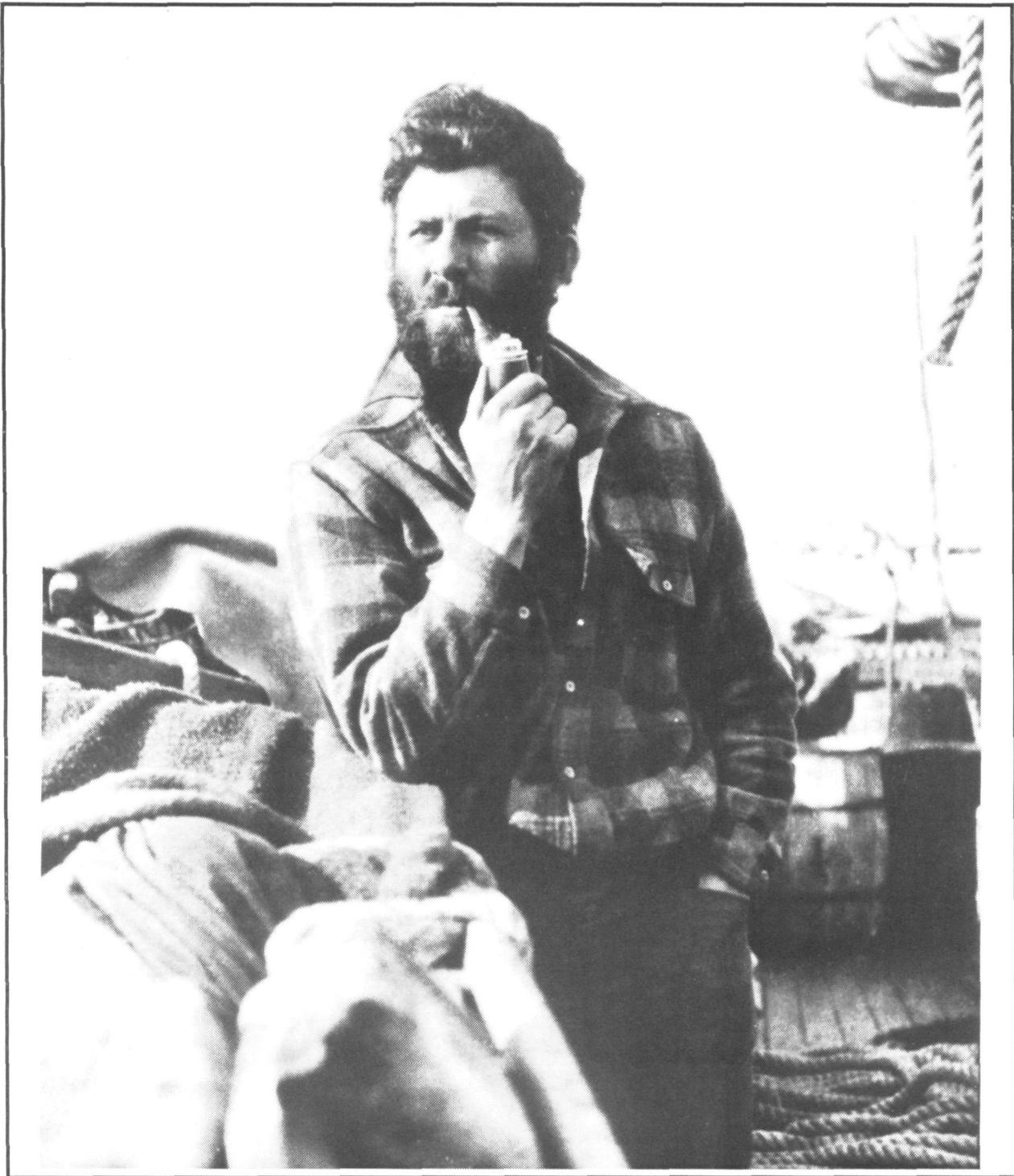


# THE POLAR TIMES



“Man With a Vision”—Larry Gould, Arctic 1926

# **National Oceanic and Atmospheric Administration**

## **The Polar Times**

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## Secretary's Letter

Our feature article of this issue is on Dr. Larry Gould, offering a very short history of his life, work, honors and awards. Walter Sullivan, who has shared quarters with Larry "on The Ice," offered to do the article but took sick at the last moment, and the task fell to me. I had to cram and still felt a little inadequate for the job. On the other hand, I got close enough to Dr. Gould to realize that we couldn't do an adequate job even if we devoted the entire issue—someone needs to write a *book!* He was a great man, and it is a pleasure for me to share his life with you.

Thanks again for those of you who have been clipping and writing articles for *The Polar Times*. Notice that we are accepting editorials, for which we claim nonadvocacy for any opinions therein expressed. We will be happy to carry your opinion (of less than 500 words) on polar topics.

I promised that I would have a detailed

oral history program ironed out by this issue. I lied! I took a two-week seminar from Dr. Charles Morrissey, past president of the American Oral History Association, where I learned that the task is not just recording an interview on tape. We do need to do it; we have a lot of Old Polar Explorers in our society who need to have their story told. Recording these stories should be one of our primary objectives as a society. I'm working on it and will be looking to involve everyone, once I get organized.

There were all kinds of comments about expanding *The Polar Times*, but the prevailing sentiment was to keep it as it is—a succinct compilation of polar events twice a year—to keep the membership abreast of the latest news. We march on without change, in this respect.

This is your magazine, so keep those articles coming.

*Brian Shoemaker*

## Editor's Note

It doesn't seem possible this is our sixth issue! What a wonderful education editing these issues has been for me. The suggestion that a subscription would be a great gift, at the right price, is well taken (see flyer), and don't forget, lapel pins make great gifts, too.

We continually strive to improve your magazine through the suggestions and support you give us. Each letter you send, every comment you make, is important to us, so please keep them coming.

*Della E. Weston*

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# The Polar Times

American Polar Society • Fall-Winter 1995

## Larry Gould, Mentor of Polar Explorers

**L**aurence McKinley Gould, polar explorer and college president, died in Tucson, Arizona, on June 21 aged 98. He was born in Lacota, Michigan, on August 22, 1896."

So read the introduction in the *London Times* last July—another obit for one of many polar explorers. But Gould was more than that—much more.

I never met Larry Gould in person but have the good fortune to be associated with many through whom his personality shines, so I feel I know him. He was a "people man" who touched the lives of others in a profound way. He exuded excellence and inspired others to excel as well. Because of him, careers in polar research, polar exploration and academic excellence were launched. Those whom he touched have dominated polar research, exploration and politics for over half a century. That legacy continues today.

Typical of the eulogies in his honor are:

"Larry was an inexhaustible spring of wisdom. To the very end of his days, his counsel was eagerly sought by educational administrators, government officials, scientists, business executives, department chairs, trustees, foundations and anybody else who turned to him."—Tony Obaid, Emeritus, Carleton College

"Laurence McKinley Gould, without whom there would have been no Antarctic Treaty."—Herman Phleger, Signatory of the Antarctic Treaty on behalf of the United States.

"Laurence McKinley Gould—You have combined several careers with brilliance and grace. You are a geologist, educator, explorer, diplomat and humanitarian. Your contributions as a teacher, researcher, scientist and statesman are incalculable... Your years of Arctic and Antarctic exploration, research and writing have established a solid foundation for all future polar exploration."—John P. Schaefer, President, University of Arizona

"His talks [to students] were on character, ethics, our place in society, the role of

science and things that few people talk about now. He was an enthralling speaker but not in a technically glib sense. In his talks, he paused, he thought, he ran his fingers through his hair, his red tie was askew, etc. It was his charisma and inspirational words that packed the chapel, all of us students wearing our own red ties and hanging on his words."—Dr. Peter Rowley, remembering Larry Gould from Rowley's college days at Carleton

"Larry took care to acknowledge his mentor. When he was an undergraduate at the University of Michigan, he roomed with Professor William Hobbs who turned Larry from law to Polar Geology. Today the Hobb's Coast in Antarctica is named for Larry's mentoring landlord."—Walter Sullivan, *New York Times*

His awards and positions of distinction are too numerous to mention in detail. They include the Congressional Gold Medal; the David Livingston Gold Medal of the American Geographical Society; The Explorers Club Medal; the Cross of St. Olaf (received from the King of Norway); Public Service Award; chairman of the Committee on Polar Research; National Academy of Sciences; president of Special Committee for Antarctic Research (SCAR); Distinguished Public Service Medal; president of Phi Beta Kappa and of the American Association for the Advancement of Science; Trustee of the Ford Foundation and of the Carnegie Foundation for the Advancement of Teaching; 27 honorary degrees; including Carleton; Harvard; Dartmouth; Columbia; University of Michigan; Notre Dame and St. Olaf.

Born on his family's farm in Michigan, Larry left home at 17 to teach in a one-room school in Boca Raton, Florida. In World War I, Larry was a member of the U.S. Army Ambulance Corps and took part in the Meuse-Argonne offensive. In 1925, after graduating magna cum laude from the University of Michigan, he obtained his doctorate and went on two geological expeditions to Greenland and Baffin Island. He was then recruited by Admiral Byrd for his first Antarctic ex-

pedition.

Working from Little America in 1929, he was flown into the newly discovered Rockefeller Mountains in a ski-equipped Fokker—the first airborne scientific camp which has become the *modus operandi* for scientific field work in Antarctica today and the means by which most of the south polar region was explored, both geographically and scientifically. The plane was smashed in a storm, and Admiral Byrd had to rescue the party in a larger Fairchild aircraft.

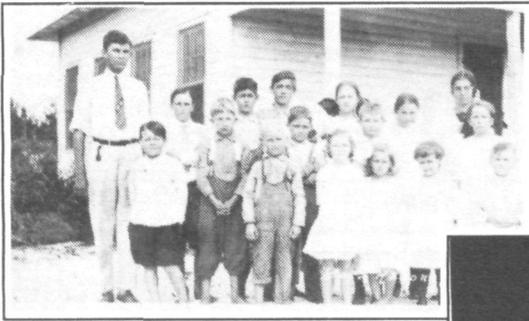
With five companions, Dr. Gould then led a dog-sledge party south to explore the Queen Maud Mountains and provide an advance base for Byrd's projected flight to the South Pole. They followed the route used 17 years earlier when Roald Amundsen and his Norwegian companions were first to reach the Pole. In a cairn at Mount Betty, named by Amundsen, Dr. Gould found one of Amundsen's notes.

He and his party marched east along the mountains until they were sure that having passed the 150th meridian, they were beyond the sector claimed by New Zealand. There, in a cairn on a low peak, they left a note claiming this land as "a dependency or possession of the United States of America." They were not only the first Americans, they wrote, "but the first individuals of any nationality to set foot on American soil in the Antarctic."

In the 1930s, Larry was a professor of geology at Carleton College in Minnesota, quickly gaining a reputation as the most popular lecturer on campus—returning to his first love that began in a one-room school house in Boca Raton.

After World War II, during which he headed the Arctic section of the Air Corps Arctic, Desert and Tropical Information Center, he was appointed president of Carleton. With his panache for excellence in everything, he built Carleton into one of the top ten small colleges in America—a reputation that continues today. As presi-

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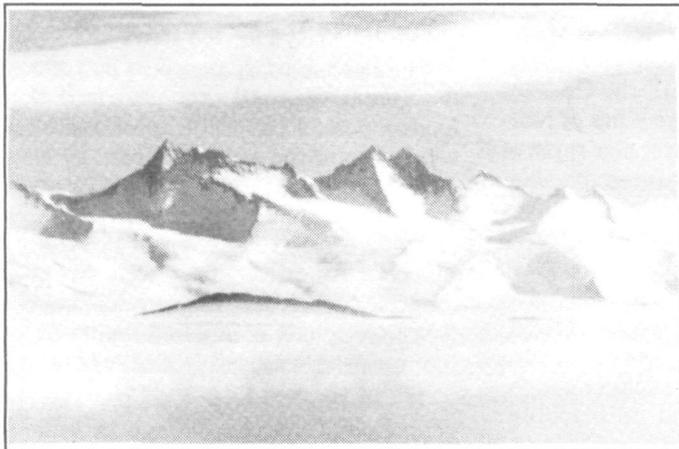


Larry with his class at Boca Raton, Florida, 1915.

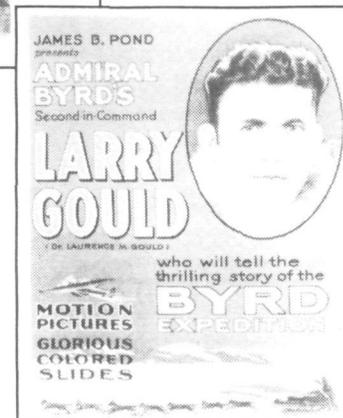


Byrd and Gould planning operations at Little America, 1929.

Fairchild aircraft used to rescue Larry and his party after their Fokker was destroyed in a storm in 1929.



Mount Gould, Antarctica



Speaking tours poster, 1930s



Larry with his good friend Ike, during a ceremony at Laird Stadium at Carleton



Rear Admiral George Dueek, commander of Operation Deep Freeze, just prior to being awarded an honorary degree by Gould, 1959.

# Gould

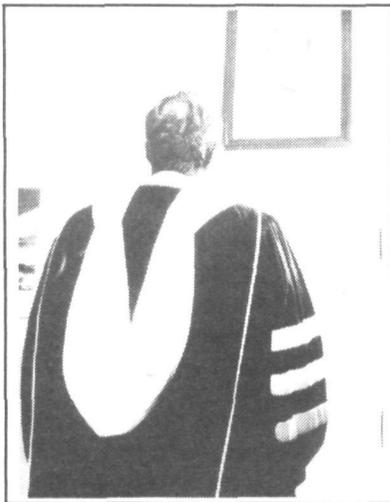
*"If I had my life to live over again I could not invest it with greater satisfaction to myself than I have done at Carleton College."*



Larry holding Walter Sullivan's book on the stay of the International Geophysical Year.



Larry at Carleton with students who considered him the most popular and inspiring of college presidents.



President Gould turns to President Lincoln for inspiration.



Larry cuts the ribbon that opens the Gould-Simpson Science Building at the University of Arizona, 1994 (see *Polar Times*, Vol. 2, No. 3).

## U.S. Navy's Attack Subs to Be Lent for Study of Arctic Icecap

America Online:PENGUIN333, p. 1, by William J. Broad (copyright 1995, *The New York Times*) (Contributor Peter Anderson)—In a major peace dividend, the Navy has agreed to let civilian scientists use its multibillion-dollar fleet of nuclear attack submarines on a regular basis to study the Arctic Ocean, a vast body of water whose riddles have long eluded scientific scrutiny.

Experts say detailed knowledge of polar ice and the Arctic depths is vital for understanding such things as climate change. For instance, such research could reveal if the predicted warming of the earth is under way and starting to melt the Arctic icecap, an icy wilderness considered one of the most sensitive and reliable indicators of global temperature change.

For decades the top of the world was off limits to much civilian inquiry because nuclear-armed American and Soviet submarines prowled and tangled beneath the ice.

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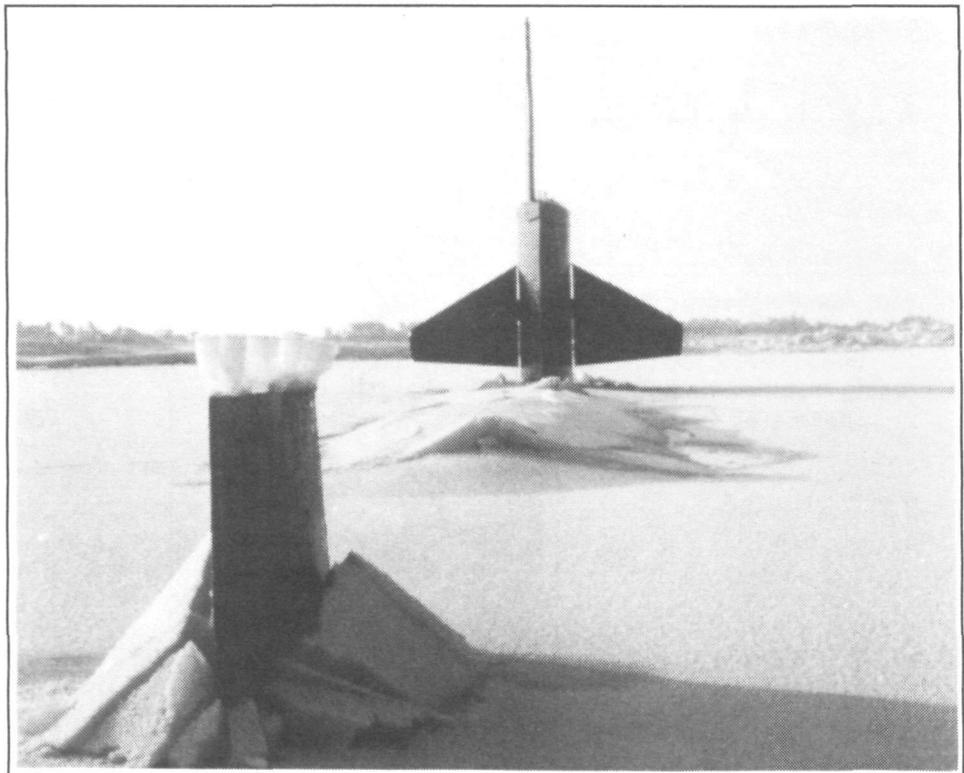
*"This program has the potential to get all kinds of data you can't get any other way."*

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Now, after a successful trial run of submarine sharing during a voyage in 1993, the Navy has agreed to let civilian scientists use its force of nuclear attack submarines for one Arctic expedition a year, with the first of the regular voyages set to begin early next month. Such vessels are designed to shadow and attack an enemy's submarines, unlike the separate class of submarines that carry long-range missiles with nuclear warheads.

"The submarine is a fantastic greyhound that can race around and find things you can't possibly keep track of any other way," said Dr. Garrett W. Brass, executive director of the United States Arctic Research Commission, a federal body that advises the government on Arctic studies. "This agreement is going to produce a fantastic increase in our ability to monitor the changes that are going on in the Arctic."

Dr. John E. Walsh, a meteorologist at the University of Illinois at Urbana-Champaign who specializes in Arctic studies, said the new program was potentially



very important. "Subs can measure the thickness of sea ice, and that has been a notoriously hard thing to do over long distances," he said. "This program has the potential to get all kinds of data you can't get any other way."

Dr. Marcus Langseth, a geologist at the Lamont-Doherty Earth Observatory of Columbia University who helped organize the 1993 trial run, said the sharing program promised insights not only into climate change but also into fisheries biology and the makeup of the earth's northernmost ocean.

"We know very little about the floor of the Arctic, so from my perspective, I'm eager to go back," he said. "It's great stuff."

During the Cold War, the Arctic got scant attention from civilian scientists because of security restrictions and poor equipment. Ice camps were periodically set up to take measurements. And icebreakers occasionally made forays across the frigid expanse. The Navy used its submarines for some Arctic studies, but the data was classified secret.

The move to let civilians use the nuclear attack submarines is but the latest peace dividend from the end of the cold War. The Navy is already sharing its \$15 billion network of undersea microphones,

built to track Soviet warships and submarines, for civilian studies of sea quakes, undersea volcanoes and whale migrations. Nuclear weapon laboratories are working to perfect the electric car. And the Air Force is using some early-warning satellites and ground-based telescopes to search for asteroids that threaten to strike the earth.

The ecological usefulness of attack subs was demonstrated even before the sharing program by such scientists as Dr. Alfred S. McLaren, a former attack submarine commander who succeeded in getting some secret Navy data declassified, including periodic measurements of Arctic ice thickness.

The trial run of sharing began in August 1993 when the attack submarine *Pargo* sailed from its base in Groton, Conn., with five civilian scientists from Lamont-Doherty, the University of Alaska and the University of Washington.

The agreement allows the Navy to cancel or shorten any cruise "if operationally required" and bars the public release of gathered data until the Navy has made sure it contains no secrets. The Navy agreed to pay for the ship time and the costs to civilian agencies of scientific research and any additional gear.

Their appetites whetted, Arctic scientists are hopeful that the Navy will renew the five-year-agreement when it expires. They note that years and decades of comprehensive data on ice thickness are needed to make trustworthy analyses of climatic trends.

Even better, Dr. Brass of the United States Arctic Research Commission said, the civilian scientific community was talking to the Navy about the possibility of getting full-time use of one of the Sturgeon-class attack submarines, some of which, he said, "are being retired with nearly a decade of service life left in them." □



GOULD—CONTINUED FROM PAGE 3

dent, he also taught classes mingling science with the humanities, as a personal contribution to education.

By 1955, Larry's political views about Antarctica had changed. In that year, scientists from 12 nations planning research programs in Antarctica met under the aegis of the International Council of Scientific Unions in Paris. It was there that the "gentlemen's agreement" was made for the period of the International Geophysical year of 1957-58 that scientists could travel about Antarctica without political restrictions posed by claimant nation sectors. Dr. Gould led the U.S. delegation and from then on, the United States and the Soviet Union advanced no territorial claims in Antarctica and recognized none by other nations.

It was this event, together with the international "cooperative efforts in Antarctica," Gould wrote, that "witnessed the first thawing of the Cold War" and precipitated the Antarctic Treaty. After the Antarctic Treaty was drafted by the IGY nations, Larry testified on its behalf before the Senate Foreign Relations Committee. He was the only

witness, amidst a host of negative individuals and institutions, to testify in favor of ratification; his eloquence carried the day, and the United States ratified on Aug. 18, 1960.

For many years, Dr. Gould was chairman of the Committee on Polar Research of the National Academy of Sciences and headed the Special Committee on Antarctic Research (SCAR), an international body that coordinates science there.

On a return trip to Antarctica in 1969, Gould, in the company of Grover Murray, visited a geological deposit near the Beardmore Glacier where a vertebrate fossil closely resembling similar ones from South Africa had been found—firm evidence that Antarctica and Africa had once been joined.

After retiring from Carleton in 1962, he joined the University of Arizona as professor of geology, then professor of geosciences, then Professor Emeritus in 1980.

Larry is gone now; he has been conferred Emeritus, Emeritus. His imprint on the Antarctic is still with us and in us. It will last forever.—*Brian Shoemaker* □

## Guard Still May Get Antarctic Mission and Navy Retire

America Online:PENGUIN333 by Andrew Compart. (Copyright 1994, Army Times Publishing Company.) (Contributed by Peter Anderson) WASHINGTON—The Navy is staying in Antarctica for at least another fall and winter, but the Air National Guard still is in the running to take over a mission the Navy is anxious to abandon.

The issue is far from settled, but officials discussed the Guard option at a late August meeting that included representatives of the National Science Foundation, the Navy, the Air Force and the Air Guard, said Dwight Fisher, deputy manager of polar operations for the foundation in Arlington, Va.

The possibility of giving the Guard the lead role in the mission surfaced in 1989, so there is no guarantee of a decision soon. But Fisher said he thinks this is the first time that representatives of all the groups have gotten together in one meeting.

But even if a decision were made today, it could take three years for the Guard to take over the mission completely, he added.

Guard officials have drawn up a "concept of operations" to show that its 109th Airlift Group at Stratton Air National Guard Base in Scotia, N.Y., could run the mission, Fisher said. But, publicly at least, Guard officials are playing it cool.

"If the Department of Defense decides that the Air National Guard should take over the Antarctica program, we would take it provided that we are given the increased manpower and funding required to support that mission," said Maj. Toivo Nei, a Guard spokesman at the Pentagon.

More people, money?

Getting more people and money could be a tenuous proposition when Guard units nationwide are losing personnel and aircraft in the drawdown. Sources previously said the 109th might need 250 more people for the Antarctic operation.

The 109th already flies in both the Arctic and Antarctica. It is scheduled to fly 54 supply missions in Antarctica this fall and winter, but the Navy will fly about 500. Flights began in earnest in October. □

## Jackie Ronne's Return Trip to an Antarctic Wasteland

*The Washington Post*, April 5, 1995, by Judith Weinraub (contributed by Gordon Fountain)—Edith “Jackie” Ronne spent 15 months in a 12-by-12 hut in Antarctica, in 1946, two years into her marriage to a drop-dead handsome naval officer and explorer. Finn Ronne, who had two previous polar expeditions to his credit, returned south after World War II to survey the last unknown coastline in the world, a 650-mile stretch along the east coast of the Antarctic Peninsula.

In late February, Jackie Ronne, 75, a widow since 1980, extended the family saga by taking her daughter Karen on a cruise to the base camp that housed her husband's expedition. Although she'd been back to Antarctica, she hadn't seen the camp since they left in the spring of 1948.

“I never thought I'd return,” she says, for it was more than the ice and cold that made life difficult—so difficult, in fact, that she'd never reread her Antarctica diaries.

When they married, Finn Ronne promised Jackie that he'd never go back to the Antarctic. “Fortunately,” says his widow, “I didn't believe him.”

Newspaper stories about Ronne's plans prompted 1,100 volunteers. Ronne chose 21, some with polar experience, some with much-needed flying, medical or mechanical skills, others with a taste for adventure.

Jackie Ronne didn't share their daring. She agreed to accompany the explorers to Beaumont, Tex., where their boat was waiting, but that was it. “I was sad,” she recalls. “I expected him to be gone for 15 months, and I knew I would miss him tremendously, but I was comfortable with the arrangement.”

In Beaumont, Ronne persuaded her to stay with the group until it got to Panama. But as the ship made its way down the Chilean coast toward Cape Horn, Ronne urged his wife to commit to the whole trip.

Even now, almost 50 years later, she recalls the arguments she made in a hotel room in Valparaiso—the last place she could change her mind.

“No woman had ever gone that far south, and the crew was suspicious,” she says. “And my family was very conservative. They would never go after headlines. My aunt was frantic.... And I was afraid that if I went with him, people would say he took me along for the publicity.

“But he was very, very persistent.”

When she finally decided to stay with him,



Jackie Ronne standing in front of a 12' x 12' hut that she lived in for 15 months—49 years ago.

Jackie Ronne realized that all she had brought along to wear were cocktail dresses and nylon stockings—“...everything I would have had for two weeks in Texas.”

So, in Punta Arenas, Chile, she disembarked to purchase nightgowns, slippers and a robe, ski boots and general necessities, plus knitting wool and needles to while away the evenings during the long antarctic winter. (The Army Air Corps had supplied cold weather clothing that it wanted tested.)

“I was in love with him,” she says simply. “I would have done anything to support the expedition, even stay behind. I would have gone to the moon. It was the moon.”

### Reminders of the Pain

Every night throughout the 15-month expedition, she recorded the day's activities and challenges—and her own comments. She filled three notebooks—the first in a school-size copybook, the next two in ship's logs.

The stresses of the expedition were apparent almost immediately. In isolation, emotions festered, and without warning, small disagreements become serious disputes. In particular, tensions emerged with a young pilot and his new wife who was the second woman in the group. “We never exchanged a harsh word,” says Ronne now, “but there was a period where we didn't speak at all.”

“I was constantly worried,” Ronne says. “The Antarctic is a dangerous place. You can turn your back and find somebody in great difficulty. The door to our hut was open

24 hours a day to report emergency situations.... One of our men went down a crevasse and was stuck upside down for 12 hours before help came. Until the rescue team got back, nobody slept. Nobody thought he would ever come out alive. Finn was beginning to worry about what he should do with the body.”

When the year was over, she was proud: proud of the success of the expedition, proud to have been the first American woman to set foot on the continent, proud that she and Finn were the first couple to reach the South Pole and that she was the first nonroyal woman to have an antarctic site—an ice shelf—named after her.

### A Quiet Life

Today, her home in Bethesda has the understated look of a house designed to set off memorabilia. The framed photographs and maps. A toy-size hickory sledge her husband made to pass the antarctic hours. A radiogram from Byrd asking him to join the admiral's second expedition.

And penguins everywhere. Mounted and stuffed, in the living room hall. On pendants and earrings. Potholders. Refrigerator magnets. The shower curtain. “Most people don't even know that penguins are from the southern hemisphere,” she says.

She knew about antarctic cruises but never wanted to go on one until late last year when she and her daughter, Karen Tupek, 44, were asked to plan “an ultimate field trip” for a group of college scientists. The Society of

by BRAD WYE, *The Washington Post*

Women Geographers signed on, too, and the Washington branch of the Explorers' Club.

Since their ship was too large to get through the icy coastlines, land was reached by large, hard-to-maneuver rubber rafts. When the rafts couldn't get any closer, the stalwart walked the rest of the way, wearing several layers of clothing, parkas and high boots. "And the clothes got really heavy when they got wet," says Ronne.

Her ultimate goal was the 1946 base camp and the hut she had shared with her husband. Ronne was determined to show her daughter where she'd spent those long months.

Was Ronne reliving her life? "To a certain extent," she says now, describing with dismay the uninhabitable buildings she discovered. "When a base is left, it's legitimately considered abandoned in the high seas. But I wanted to fix up what was broken, iced over, ripped out. And I wondered what happened to our 5,000-pound galley range and curtained bunks." And she hadn't anticipated the images of "hurdles and vicissitudes" that she says came flooding back.

When Ronne left the camp a few hours later, she closed the door firmly, shutting out wind and snow and—perhaps—some memories. "I wouldn't have given up that experience for a million dollars," she says. "Nor would I ever have done it again." □

## Seal Hunting Conflict Still Rages in Canada

### Government Expanding Annual Harvest

*The Washington Post*, March 12, 1995, p. A20, by Anne Swardson (contributed by Peter Anderson) **IN THE GULF OF ST. LAWRENCE**—The white baby seal lifts his head, looks around and yowls plaintively. Quickly, he gets what he is looking for. His dark-coated mother, poking her head from the water through a hole in the thick ice, gives him a reassuring nuzzle, just as members of her species have done for millions of years.

This particular maternal gesture, however, is greeted by a thoroughly modern chorus of oohs, aahs, coos and shutter-clicks from a group of orange-suited, wide-eyed city folk, brought here by a fleet of helicopters standing just a few yards away. It's not just seals who revel in the sweet joys of whelping season.

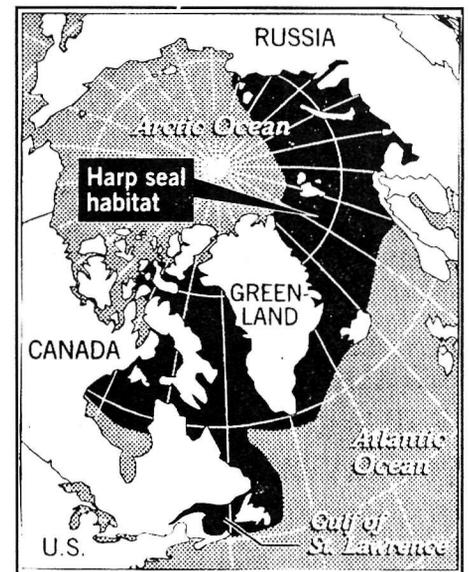
The days when Canadian pelt-hunters bashed the skulls of baby harp seals such as these are more than 10 years gone, but the war over seal hunting rages on. Each year at this time, the International Fund for Animal Welfare (IFAW), which almost single-handedly shut down the seal hunt here more than a decade ago, flies dignitaries and journalists out to the ice floes for a firsthand look at the soft-eyed creatures saved from the hunter's club.

*. . . the war over seal hunting rages on.*

At the same time, the government of Canada, and some very unhappy and unemployed seal hunters, are searching for ways to revive the seal trade without alienating world opinion.

They see the need as particularly great this year because fish stocks have declined so drastically—in part, locals say, because so many seals are eating them—that former fishermen along the impoverished Atlantic Coast need another way to make a living.

This year, the Canadian government is offering a 15 cents-per-pound subsidy for seal meat in hopes of developing a market for the stuff and, in addition to the regular professional hunt, will allow amateurs to kill up to six adult seals each, when the annual hunt takes place later this month. IFAW officials say the moves could lead to

by BRAD WYE, *The Washington Post*

another round of confrontations between hunters and "seal-huggers."

The now-defunct hunt for the whitecoats, as harp seal cubs are known before they shed their baby fur during weaning, may have been the biggest international public-relations disaster Canada has seen.

Hunters preferred clubs because neither the seals nor neighboring hunters could get unnecessary holes in their hides.

But the clubs looked even more brutal than guns, and in the 1970s, animal-welfare groups, equipped with helicopters and cameras, began bringing in foreign politicians and journalists to record the annual spring hunt.

*. . . seal hunters . . . find a market for . . . less than one-fifth of the government quota they are allowed to kill.*

In 1987, Canada itself banned the killing of whitecoats under an IFAW threat of further action, including an international boycott of all Canadian fish products.

Since then, Canadian seal hunters have been able to find a market for only 50,000 or so adult seals each year, less than one-fifth of the government quota they are allowed to kill. □

## The Final Flight of the B-29 *Kee Bird*

by Col. Peter Barretta, USAF (Ret.), for the American Polar Society



Photo by Darryl Greenamyer

After nearly 50 years, an attempt was made, on May 20, 1995, to recover a World War II B-29 from a frozen lake in northwestern Greenland when it was destroyed by fire. Disaster struck as the restored B-29 *Kee Bird* taxied over the rough surface of the ice cap.

Everything worked well as the pilot tested the plane's ability to turn, brake and ultimately fly. As the plane accelerated to a peak of 65 to 70 knots, the snow surface became incredibly rough and, as the plane was bouncing, a fuel line ruptured and pumped fuel onto a hot auxiliary power unit in the tail. The stream of fuel fed the fire, and it spread fast.

Although the fire spread quickly through the B-29, everyone on the stricken plane got out safely. It took less than three minutes after the fire started until the whole tail broke and dropped to the icy ground. The fire spread into the cockpit, and it collapsed backward. The burned wreckage of the *Kee Bird* was an extremely depressing sight.

The vintage aircraft had come perilously close to experiencing a similar blazing fate when it crashlanded on the frozen lake on Feb. 21, 1947. On the day before, the B-29 took off on a Top Secret classified mission to conduct a pioneering surveillance flight over the North Pole and beyond. The B-29 and its crew were part of Project Nanook, a

two-pronged effort consisting of doing scientific research over the Arctic on weather and the effect of the magnetic pole on navigational instruments.

The other effort consisted of spying on the Soviet Union and aerial mapping of the Arctic regions. The crew had been searching for signs of Soviet expansion and to investigate the likelihood of Soviet attack via the North Pole from established bases on the polar ice cap as launching pads of war.



The American Polar Society membership lapel pins will make great Christmas gifts. They are a work of art, with an Emperor penguin and a polar bear against a background of sun riding low on the horizon of a pale blue summer sky. This is surrounded by brass lettering of the American Polar Society set in a field of black, symbolic of the six-month winter at each of the poles. Price is \$5. An order form is inside the front cover.

*Thank You!*

In 1993 and 1994, a renowned aviation figure, Darryl Greenamyer, formed an 11-member recovery expedition to retrieve the B-29. Over this period the expedition's members replaced all four engines and propellers and rewired and reconditioned some 150 smaller motors that worked all the hydraulic systems of the plane. The expedi-

*Everything worked well as the pilot tested the plane's ability to turn, brake and ultimately fly.*

tion members had planned to return in April 1995, test the systems and fly the B-29 *Kee Bird* to Thule Air Force Base, Greenland, and then fly the B-29 to the United States for static display and eventually to participate in air shows. Instead, unfortunately, the recovery project ended in a fiery nightmare on May 20, 1995.

The expedition members and aviation enthusiasts had hoped that the recovery of the B-29 would add to the only other flyable B-29 in existence.

The publisher of an aviation magazine had written that the "*Kee Bird* comes from an era in flight history that has a special spot in aviator's hearts. "It is a lot more than just sheet metal, engines and wings. It will be a national treasure." □

(Ed. Note: See companion article in Vol. 2, No. 4, of *The Polar Times*.)

## Christmas Gibing

## Polar Christmas

We all know that Santa Claus resides at the North Pole and that both poles are really a Christmas Fairyland. With this thought in mind please consider giving a gift membership to the American Polar Society to a friend this Christmas. The price is right: just \$10. Fill out the opposite side of this card and mail it to us; we will mail a copy of this *Polar Times*, plus the 1996 issues to them next year.

Our best wishes for a Merry Christmas and a very Happy New Year!



Brian Shoemaker, Secretary

I nominate the following friends for  
membership in the  
**American Polar Society:**

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ ST \_\_\_\_\_ Zip \_\_\_\_\_

1996     1997

\_\_\_\_\_ Membership Pins @ \$5<sup>00</sup>

.....

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ ST \_\_\_\_\_ Zip \_\_\_\_\_

1996     1997

\_\_\_\_\_ Membership Pins @ \$5<sup>00</sup>

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Name \_\_\_\_\_

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City \_\_\_\_\_ ST \_\_\_\_\_ Zip \_\_\_\_\_

1996     1997

\_\_\_\_\_ Membership Pins @ \$5<sup>00</sup>

**TOTAL ENCLOSED \$** \_\_\_\_\_

## British Huskies Die After Eviction From Antarctica

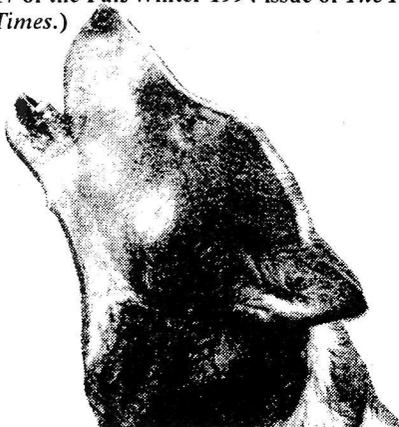
*London Times*, Feb. 24, 1995, by Nick Nuttall (contributed by Billy "Ace" Baker)—A fatal illness has struck the last surviving British huskies after they were forced to leave Antarctica for a Canadian town on the edge of Hudson Bay. Almost half the dogs have died since an environmental treaty forced them to leave their home. The deaths have been linked with an infection to which the huskies, born and bred in Antarctica, had no resistance and to which they succumbed within days.

John Hall, of the British Antarctic Survey in Cambridge, said yesterday that it might be a viral infection. "We gave them multi-shot jabs and rabies jabs," he said, "but our dogs have never been in contact with anything at all because they have been isolated in Antarctica." Hall, who had found the deaths had caused distress among scientists and researchers at the survey's Rothera base in Antarctica and at its headquarters in Cambridge. The huskies are descended from dogs taken to Antarctica by the British in 1945 to support Operation Tabarin, a mission to monitor German ships.

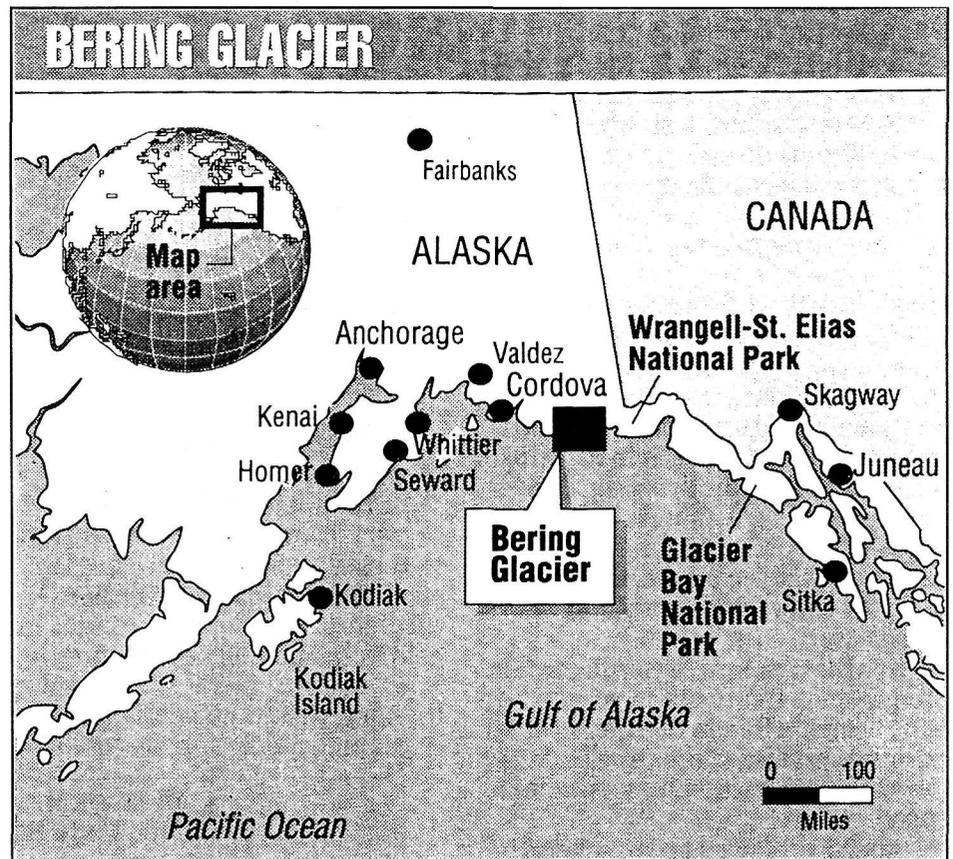
The area [in Canada] was ideal for huskies, unlike Minnesota, to which Australia had sent its dogs and where the snow was often too deep for them.

The deaths are believed to have distressed the Inukjuak villagers, who greeted [the dogs'] arrival with tears and sobs of joy. Huskies disappeared from the area some years ago after an outbreak of distemper and the arrival of snowmobiles. The Inuit are keen to restore their traditional way of life, and the introduction of the dogs was considered an important part of this scheme. □

(Ed. Note: See the companion article on page 17 of the Fall/Winter 1994 issue of *The Polar Times*.)



## Glacier Nears Gulf of Alaska



THE OREGONIAN

*The Washington Times*, July 9, 1995, p. D8, by Allen Baker (contributed by Peter Barretta Jr.) **ANCHORAGE, ALASKA**—Bering Glacier, the continent's largest, has slid to within 1-1/2 miles of the Gulf of Alaska, raising concerns about ice-covered habitat and icebergs in oil-tanker shipping lanes.

Scientists say galloping glaciers, such as the Bering one, are a result of "bad plumbing," when a cushion of water builds beneath the ice and slicks the way for glaciers to flow faster. In glacial terms, that can mean 100 yards a day.

The Bering Glacier, about 75 miles southeast of Cordova, advanced about six miles last year before stopping. This year, it has moved as much as four miles in some places since early May.

The 145-mile-long glacier has nearly reached the point of its farthest advance in historical times, the Bureau of Land Management said. That last big move came in 1902; other advances were recorded at intervals of 20 or 25 years.

Bruce Molnia, who directs a U.S. Geological Survey study of the Bering, said the glacier was moving at the rate of two feet a

day or less before it started surging last year.

It accelerated to an average of 100 feet a day, with occasional bursts of 300 feet a day. During its peak, an estimated 30 million tons of ice calved from the glacier each day.

About 10 percent of the world's trumpeter swans nest on the margins of the Bering Glacier. Areas now covered by ice once attracted roughly 8 percent of the world's population of dusky Canada geese, which number about 7,000 birds.

The geese have moved to forelands, but scientists say the area could be overrun by moving ice. □

### By the Way...

Ocean water around Antarctica gets cold come March. That's when sea ice down there starts to form at a rate of 22 square miles per minute. Come October, though, it breaks up even faster—at a rate of about 44 square miles per minute. □

## New Theory on Ice Sheet Catastrophe Is the Direst One Yet

*The New York Times*, "The Environment," May 2, 1995, by Walter Sullivan (contributed by Peter Barretta Jr.)—While the melting of the West Antarctic Ice Sheet, which would raise worldwide sea levels by 20 feet, has long been considered one of the direst potential consequences of global warming, some polar specialists are suggesting an even more catastrophic scenario.

Meeting last month in Woods Hole, Mass., specialists from many parts of the world debated the stability of the huge East Antarctic Ice Sheet. Could global warming cause it to slip into the sea? Even partial slippage would inundate many coastal cities and much of the world's food-producing land.

Antarctica is divided by the Transantarctic Mountains into two icy regions. To the west, south of the Americas, is an ice cap that rests on a submerged archipelago comparable in size to the Philippines. Great ice "streams" flow relatively rapidly toward the sea. That the whole sheet might run off into the ocean is widely regarded as a long-term possibility. The ice on the other side of the Transantarctic Mountains rests on a buried continent with a few inland basins. Those who believe slippage may occur say they would expect a partial shedding of ice, which they say occurred repeatedly until the Pliocene, three or four million years ago. It is estimated that a shedding of one-third of the East Antarctic Ice Sheet would raise global seas more than 150 feet.

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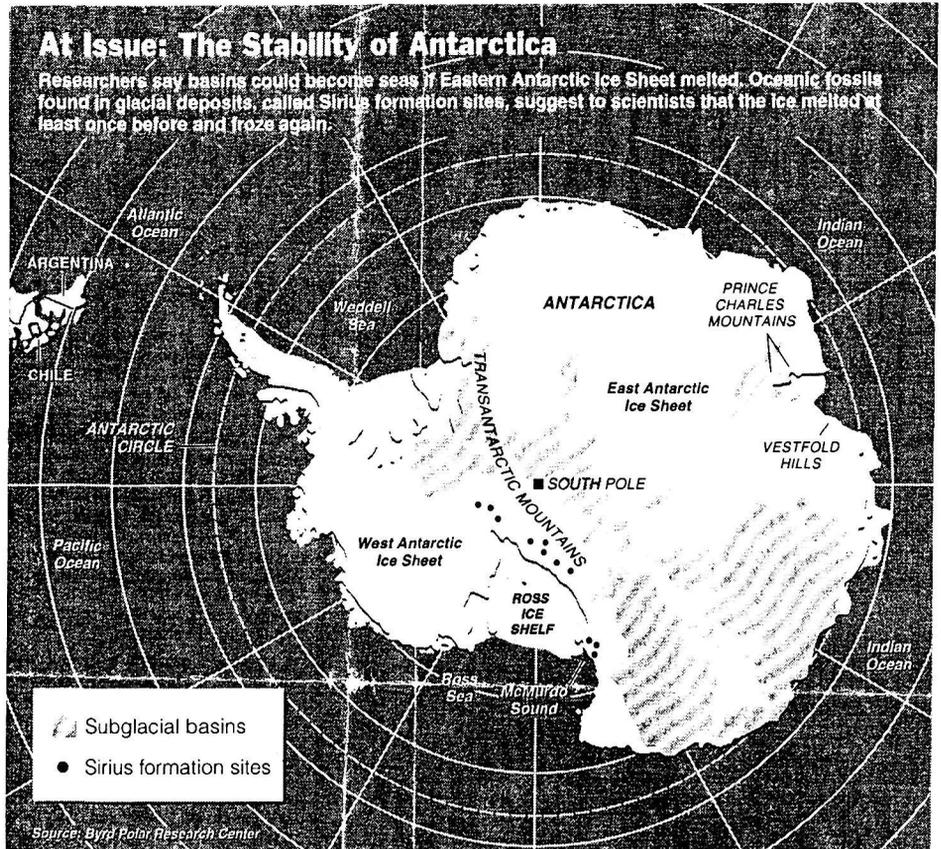
*Loss of one-third of the East Antarctic Ice Sheet could cause seas worldwide to rise 150 feet.*

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A total melting of polar ice, including that on Greenland, would inundate all low-lying areas. This occurred during the Cretaceous Period, 65 million to 135 million years ago.

Opponents of the slippage theory cite evidence showing that the Antarctic ice has been stable for at least 17 million years. Cores extracted from the floors of the seas that surround Antarctica, they say, show no curtailment of sediment from melting icebergs, as would be expected had the continent become partly ice free.

But proponents argue that at no time since



THE NEW YORK TIMES

the Pliocene, when summer temperatures in the Arctic were 10 to 20 degrees Fahrenheit warmer than they are today, has the earth been as warm as some predict it soon will be. The great East Antarctic ice sheet, in places three miles thick, was formed after the Pliocene. Before that, they propose, the ice waxed and waned, although it was never as extensive as now.

It was such claims and rebuttals, as well as the potential importance of the answer, that prompted the National Science Foundation to sponsor the recent "Pliocene Antarctic Glaciation Workshop" at the Woods Hole Oceanographic Institution. Participants came from as far as Australia and New Zealand, as well as from Britain, Switzerland, the Netherlands, Italy, Sweden and research centers throughout the United States.

Prominent among those arguing for major variations in earlier East Antarctic ice cover were Dr. Peter N. Webb and Dr. David Elliot of the Byrd Polar Research Center at Ohio State University in Columbus, and Dr. David M. Harwood of the University of Nebraska in Lincoln. The skeptics included Dr. George Denton and Dr. David Marchant of the University of Maine in Orono; Dr. James P. Kennett of the Marine Science Institute

of the University of California at Santa Barbara; his former student, Dr. David A. Hodell, now at the University of Florida in Gainesville; and David D. Sugden of the University of Edinburgh in Scotland.

If there were great discharges of ice during the Pliocene they would have raised sea levels substantially throughout the world. Determining the extent of such rises has been frustrating because the land in many of the coastal areas being measured has been rising and falling due to erosion, geologic action and ice ages. These sites include New Guinea, New Zealand, Enewetak Island in the mid-Pacific, the Middle Atlantic coastal plain of the United States and several places in Alaska.

The debate is not the first of this kind in geologic history. There have been seemingly preposterous theories that later proved correct, such as the idea that the continents are moving relative to one another. And there have been those that were correctly ridiculed. One of those was a proposal in 1964 by A.T. Wilson of Victoria University in New Zealand that the ice ages may have been caused when surges of Antarctic ice into the sea formed giant regions of floating, sun-reflecting ice that cooled the climate.

Smaller surges are well documented. They occur in Alaska where certain glaciers grow so large that their flow greatly accelerates. In northern India the Kutiah Glacier is said to have advanced 360 feet a day.

In 1972, John T. Hollin, a British graduate student at Princeton University, proposed that an Antarctic slippage might be sudden enough to cause sudden global flooding. He cited the "London brickearth," a deep clay deposit used to make bricks for London's old buildings. During the last century the remains of "elephants," generally assumed to have been victims of the

*Coastal cities and much food-producing land would be threatened.*

Biblical flood, were found in this clay. The swifter animals, it was said, avoided drowning "by escaping to the hills." The "elephants" are now believed to have been Ice Age mastodons. The idea of sudden flooding is not widely accepted.

A number of the participants in the Woods Hole meeting who had not taken sides beforehand said when it was over that not enough was known of past sea levels or other clues for a convincing answer either way. □



## Oil and the Caribou

*The Washington Times*, Aug. 8, 1995, p. A10 (contributed by Peter Barretta Jr.)—The Canadian ambassador has joined the fray over opening Alaskan parkland to oil exploration because it could disrupt the annual migration of a Canadian caribou herd.

The Senate is considering a measure that would allow Alaska to lease a portion of the Arctic National Wildlife Refuge to oil companies.

Ambassador Raymond Chretien has written the Senate Energy and Natural Resources Committee to argue that drilling could affect a herd of Porcupine caribou that migrates

across the Canadian-Alaskan border.

"Canada believes that opening the refuge to [oil and gas] development will disrupt the sensitive calving grounds and the migratory patterns of the Porcupine caribou herd on which thousands of Canadian and American aboriginal people depend," Mr. Chretien wrote.

Committee Chairman Frank H. Murkowski, an Alaska Republican who supports oil drilling in the refuge, said that Canada's concerns will have to be considered before any final decision is made. □

(Ed. Note: See companion stories, pp. 14 & 21)

## The "New South Polar Times"

*New South Polar Times* (contributed by Billy "Ace" Baker)—(Ed. Note: Those of you with E-mail may be interested in the following.)

*The New South Polar Times* is a bi-weekly newsletter written by one of the staff at the Amundsen-Scott South Pole Station, South Pole, Antarctica. The idea for the newsletter grew out of correspondence between several of the staff at the Amundsen-Scott Station and participants in an Internet workshop sponsored by The Virginia Space Grant Consortium during the summer of 1994.

The workshop leader, Katie Wallet, and the officer in charge of NOAA operations at the station, Lt. Tom Jacobs, decided that students and teachers from around the world would be interested in learning about Antarctica, the scientific research which was taking place at the station and life at the station. Realizing that communication with individual classes was prohibitive because of the busy schedule of the staff at the sta-

tion, they decided to create the newsletter which would be available on Internet. Lt. Jacobs volunteer to write the newsletter until he left the station.

The title, *The New South Polar Times*, was suggested by Lt. Jacobs and named for the first newsletter to be written in the Antarctic, *The South Polar Times*. *The South Polar Times* was a newsletter for and by the men on Robert Scott's ship, *The Discovery*, on Scott's first expedition to Antarctica, July 1901-September 1904. It was on his second expedition to the Antarctic that Scott lost the race to the South Pole to Raold Amundsen by just 34 days. The station at the South Pole is named for these two brave men.

We hope you will find the newsletter a jumping off point for studying the fascinating continent of Antarctica. If you have ideas for additional things you would like to see in the newsletter, please send them to Katie Wallet (kwallet@pen.k12.va.us). □

*The South Polar Times was a newsletter for and by the men on Robert Scott's ship.*

## Perry Has No Comment on Nukes in Greenland

*The Washington Times*, July 2, 1995, p. A7. (Contributed by Peter Barretta Jr.) COPENHAGEN—Sidestepping a Danish controversy, Defense Secretary William Perry declined to say yesterday whether the United States ever stored atomic bombs on Greenland.

The Danish government disclosed Thurs-

day that in 1957 a former prime minister secretly gave the United States permission to deploy nuclear arms on Greenland and let nuclear-armed bombers fly over it. The semi-independent Arctic island is under Danish control.

But officials have not said whether Washington ever actually deployed nuclear weap-

ons on Greenland.

"Our responsibility is to provide full information to the Danish government," Perry said after talks with his Danish counterpart, Hans Haekkerup. "They have a further decision, which is: How much of that information should be regarded as declassified?" □

## Study Condemns Arctic Oil Drilling

### Interior Department Says Activity Would Upset Alaskan Ecology

*The Washington Post*, Aug. 27, 1995, p. A4, by Tom Kenworthy (contributed by Peter Barretta Jr.)—A new study by the Clinton administration concludes that drilling for oil in the arctic National Wildlife Refuge in northern Alaska would do significantly more damage to the region's fragile ecology and wilderness character than previously thought.

Both the Senate and the House of Representatives passed measures in favor of allowing oil drilling in the refuge as part of their budget resolutions.

"The irreplaceable and enduring value of the Arctic Refuge to the nation as a world-class natural area and wilderness is far greater than the short-term economic gain to be garnered from industrial development," concludes a draft of the study prepared by the Department of the Interior. The report has not been released, but a copy was obtained by *The Washington Post*.

*"...drilling should continue to be banned in the 19-million-acre refuge."*

The new study was commissioned strictly to examine the potential environmental effects of oil drilling, not its possible local or national economic benefits. However, in a separate report last June, the U.S. Geological Survey reduced its estimate of the maximum potential oil yield from the coastal plain by more than 50 percent.

Calling the refuge "the outstanding example of remaining American wilderness," the new study said petroleum drilling would have greater adverse impacts than earlier believed on the huge Porcupine caribou herd that migrates through the area, on physical resources such as scarce water supplies and on the fragile vegetation of the tundra.

The new report by the Interior Department is likely to bolster the administration's view that drilling should continue to be banned in the 19-million-acre refuge, which is home to one of the continent's largest caribou herds, muskoxen, brown bears, polar bears and many species of birds and marine mammals.

The new, gloomier analysis of the potential environmental consequences of drill-

ing in the refuge seems unlikely to deter Congress. The House and Senate committees charged with turning the oil-drilling recommendations passed by both houses into actual legislation are headed by Alaska Republicans, Sen. Frank H. Murkowski and Rep. Don Young, who are firmly committed to drilling. And the senior Democrat on the Senate Energy and Natural Resources Committee, Sen. J. Bennett Johnston (D-La.) has predicted that proponents of drilling in the refuge have enough votes to prevail.

Nonetheless, the new Interior Department analysis will add fuel to an emotional argument that has persisted for 15 years, ever since Congress left the question of oil drilling in the refuge unresolved when it passed the 1980 Alaska National Interest Lands Conservation Act.

Murkowski and other Alaska politicians have endorsed opening the refuge to drill-

ing as a key component of U.S. energy policy, saying it will guard against dependence on foreign oil supplies and boost domestic employment.

The new Interior Department study, however, dwells less on the practical and more on the metaphysical allure of the Arctic coastal plain.

It particularly criticizes the earlier report's conclusion that oil development would result in "no appreciable decline" in the 300,000 caribou in the Porcupine herd. "The cumulative effects of reduced access to habitat providing preferred forage, predator avoidance or insect relief for the [herd] caused by full development of the...area would result in a major, adverse impact on the herd," predicts the analysis.

"From many vistas within this area," the new report says, "visitors can enjoy awe-inspiring views of 9,000-foot, snow-clad peaks, glacial valleys, braided rivers, rolling tundra meadows and terraces, shallow lakes, beaded streams and sea ice—an opportunity not available elsewhere on American soil." □

## Alaska Governor Urges Oil Drilling in National Refuge

*America Online: Penguin333*, March 31, 1995 (contributed by Peter Anderson) ANCHORAGE, ALASKA—Alaska Gov. Tony Knowles launched a state campaign Thursday to urge Congress to allow oil drilling in a national refuge and said revenues could be used for conservation.

Knowles said he plans to use \$650,000 of state money to fund congressional trips to Alaska, state lobbying missions and information booklets touting potential environmental payoffs of the controversial development proposal.

Knowles, a Democrat, outlined his strategy for the Arctic National Wildlife Refuge (ANWR) in a speech to a local Democratic organization.

The governor suggested using ANWR oil revenues for a "national heritage" trust fund that could buy back offshore oil leases sold by the Reagan administration for southwestern Alaska's Bristol Bay, site of the world's biggest sockeye salmon run.

He also suggested using some ANWR oil revenues to preserve national parks.

In addition, the Gwich'in Athabascan Indians of northeastern Alaska and northwestern Canada—who have adamantly opposed ANWR drilling—would help plan and oversee the development, Knowles said.

"I'm not doing it either for the Gwich'in people or the environmentalists as a buy-off. I'm doing it because it's the right thing to do," he told reporters.

The oil industry has said the coastal plain of the northeast Alaska refuge, east of the giant Prudhoe Bay oil field, is the most likely site for a major new onshore discovery.

Protests from environmentalists and the Gwich'in, who fear damages to the region's caribou herd, have so far blocked drilling there.

Most Alaska politicians support ANWR development.

The \$650,000 Knowles plans to use for the campaign is money previously allocated by the state legislature for drilling, but has not yet been spent.

In past years, the legislature funded an ANWR-development campaign that used advertisements in major newspapers to tout the job-creating possibilities of ANWR drilling. □

(Ed. Note: See companion stories, pp. 13 & 21)

## Secrets to Global Weather Sought in Antarctica's Ice

*Columbus Dispatch*, Feb. 19, 1995, by Pat Brennan (contributed by Peter Anderson)—Antarctica's ice may tell if pollution is raising temperatures on Earth and whether global warming is shrinking the Antarctic ice sheet.

Scientists are drilling ice cores, taking temperatures and measuring snow accumulation to learn more about the continent's role in regulating Earth's climate—and whether the ice cap can be used to predict trends.

"Ice cores provide a unique view of the world," said Paul Mayewski of the University of New Hampshire, who directs a team of researchers that drilled a core in the west Antarctic ice sheet this season. "I would call it a time machine."

Antarctica acts as a refrigeration unit, cooling ocean currents that affect weather throughout the world. But scientists don't know the details. If the ice sheet is shrinking, is it because of global warming? Or is the situation reversed—will a dwindling ice cap heat up the planet?

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*... taking a direct reading from deep inside a bore hole can reveal temperatures from centuries ago.*

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Mayewski believes that one of the best ways to find out is to learn more about how climate has changed. Then, he hopes to begin predicting where Earth's climate is headed.

He and other researchers stunned the scientific community in 1993 when they studied ice cores in Greenland and found evidence of wild and sudden changes in temperature over the past 110,000 years.

Now he wants a similar record for the Southern Hemisphere. This year, his team drilled a core 524 feet deep at Antarctica's Siple Dome—a kind of ice island left behind by rivers of ice streaming into the sea.

Because ice has accumulated undisturbed on the dome for so long, he was able to establish a climate history going back 2,000 years.

The simplistic view of global warming is that it is a worldwide increase in temperature, the result of industrial gases, such as carbon dioxide, that trap heat in the atmosphere. But as usual in science, the situation is turning out to be a bit more com-

plicated. Human pollution may indeed be raising temperatures in some places. But it could be lowering them in others.

The average global temperature seems to have risen as much as one degree over the past 130 years—a period that roughly corresponds with the start of the Industrial Revolution.

Yet no one knows whether the rise in temperature is really linked to pollution, or whether it is just a hiccup in geologic time—a statistical jiggle caused by natural forces.

What's missing, Mayewski says, is a clear understanding of how Earth's climate works without humans thrown into the mix.

"It is unequivocally true that we are polluting the atmosphere, water, land," Mayewski says. "But it's really important to separate from that the climatic implications. What causes natural climate is poorly understood."

The world of other researchers in Antarctica this year could help. One group is

looking not at ice cores, but at the holes left behind when cores are removed. Since ice, if undisturbed, can remain at the same temperature it was on the day it fell to the ground as snow, taking a direct reading from deep inside a bore hole can reveal temperatures from centuries ago.

If the temperature estimates gleaned from ice cores agree with direct temperature measurements from inside the holes that the cores leave behind, this would strengthen any conclusions about long-term trends and global warming.

A third research effort involves measuring an apparent increase in annual snow accumulation at the South Pole. Whether that increase is because of global warming, global cooling or something else remains unknown.

If the more unstable of the Antarctic ice sheet's two pieces melted, sea level would rise 20 feet or more worldwide. And if all the Antarctic ice melted—fortunately an unlikely proposition—sea level could rise 200 feet. That kind of sea-level rise easily would put Miami, Boston, New



Greenland ice cores are readied for later comparison with Antarctic ice cores.

Orleans and Houston underwater.

Yet the polar plateau, which covers most of Antarctica's interior, gets about the same amount of precipitation as Cairo, Egypt. Most of that precipitation falls as snow and never melts. □

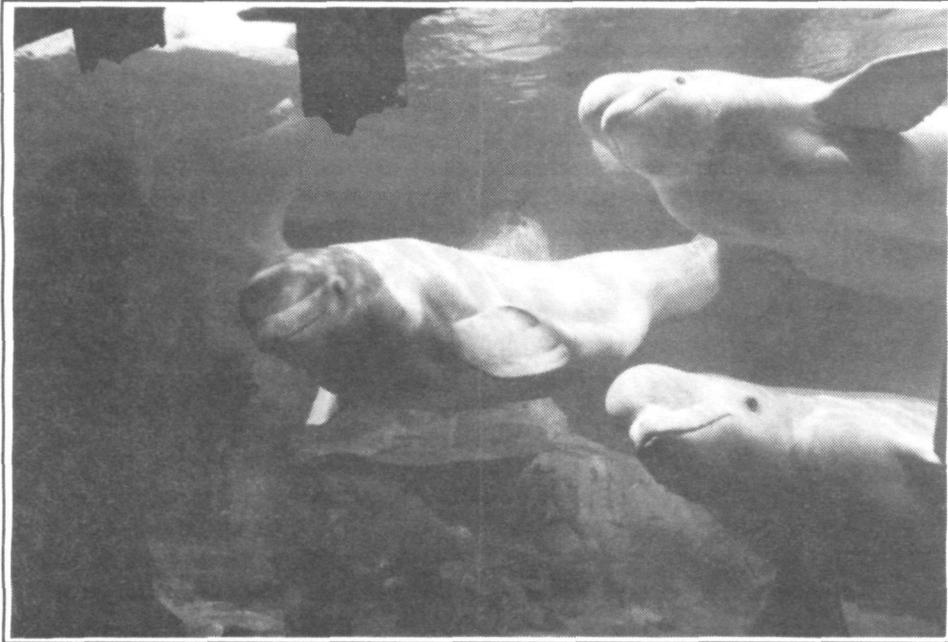
### Explorers Complete Arctic Crossing

*The Washington Post*, July 6, 1995, p17 (contributed by Peter Barretta Jr.) VANCOUVER—An expedition led by veteran American explorer Will Steger has completed a 1,200-mile crossing of the Arctic Ocean by dogsled and canoe, a spokeswoman said.

After a four-month journey starting in Russia, the six-member team reached Ward Hunt Island, the northernmost point of land in Canada, late Monday, said Barbara Horlbeck, director of the International Arctic Project, which organized the trip.

The team was picked up Monday by plane and is traveling back to its base at Ely, Minn. The National Geographic Society will honor team members at a ceremony in Washington next week. □

## Cold-Weather Life Becomes Reality at Sea World's New Wild Arctic



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Known to scientists and sailors as sea canaries due to the high-pitched, birdlike sounds they make, beluga whales inhabit the cold waters of the Arctic and are only one of the many animals found at Sea World of Florida's new Wild Arctic section of the theme park.

*NAS Pensacola Gosport, July 21, 1995* (contributed by Billy "Ace" Baker)—Wild Arctic, the most ambitious project undertaken in Sea World of Florida's 21-year history, and also the largest at any of the nine Anheuser-Busch theme parks, is now open in Orlando.

Wild Arctic is an adventure so extreme it takes guests where they've never been before, combining a thrilling motion-based flight over the frozen North and up-close real-life encounters with the majestic creatures that live there.

"This is the first time that an adventure film and flight simulator technology have been used in this way," said William A. Davis, executive vice president and general manager. "Rather than simply serving as entertaining sensations, they transport our guests on yet another exhilarating Sea World adventure, exploring the Arctic and meeting live polar animals."

To start their journey, guests enter a hangar where jet helicopters and hovercraft are based. Massive murals provide a glimpse of the land they will soon explore.

While waiting to board their helicopters, guests are briefed on the history of polar exploration, geographical information about the Arctic and—just in case—cold weather survival techniques.

They're told a powerful polar storm is approaching but the pilot will attempt to

outrun it and get them safely to the remote research camp, Base Station Wild Arctic. On the journey, passengers get to see much of what makes up the Arctic.

After some harrowing experiences, the helicopter finally "lands" at Base Station Wild Arctic. When passengers emerge from the helicopter, they are in the strange world of the Arctic.

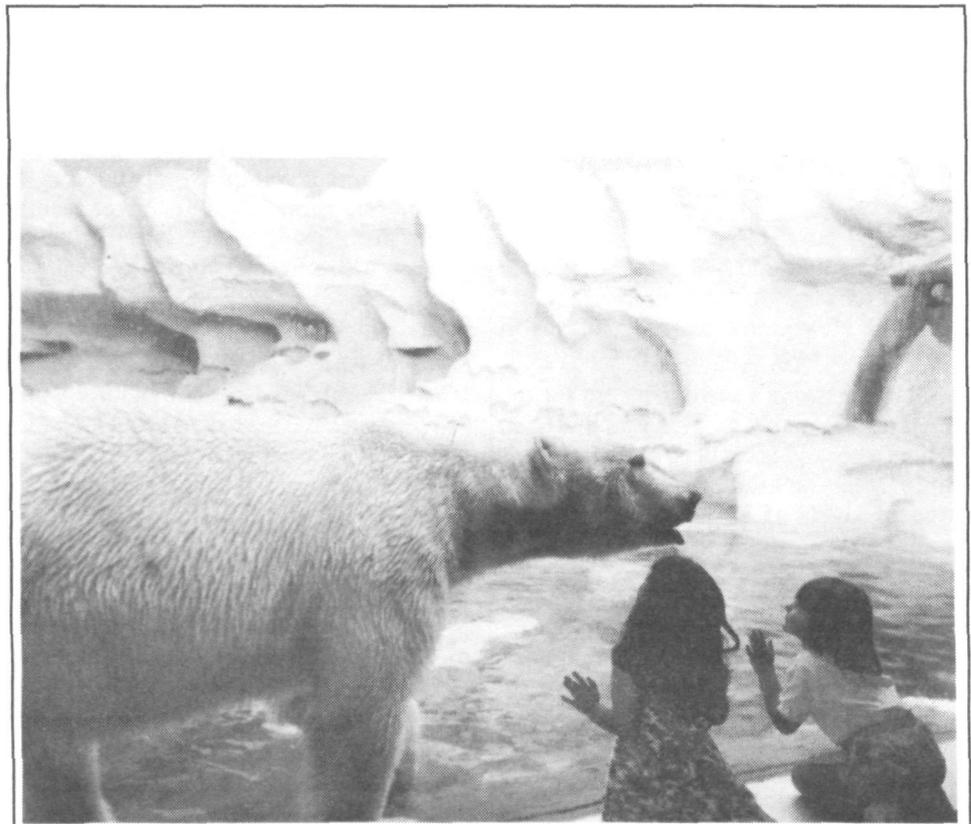
There is the skeleton of an old wooden ship to be explored and live Arctic animals to interact with.

Almost one million gallons of manufactured seawater create part of the Arctic Ocean.

Multilevel ecosystems give elevated views of fascinating species. Rock formations, ice floes, surge pools and boulders recreate a habitat for the Arctic animals.

Wild Arctic also offers interactive opportunities. Using touch screens, observations of guests on walrus and polar bear behavior are recorded. Their data becomes part of Sea World's overall behavioral studies recorded for future generations.

It's the ultimate extreme adventure. □



Weighing up to 1,800 pounds, standing over eight feet tall and having paws measuring up to a foot long and a foot wide, polar bears are among the most beautiful and dangerous of all Arctic animals.

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### Young Explorer's Page



### 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 3 to 4 feet tall and weighs between 50 and 75 pounds. It nests on the sea ice, laying a single egg in the autumn. When the young chicks are able to feed themselves, at six to eight weeks, the colonies break up. Then the adult penguins abandon their young and move north in search of food. Adelie penguins are much smaller than Emperors, 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.



Emperor



King



Rockhopper



Adelie



Macaroni



Gentoo



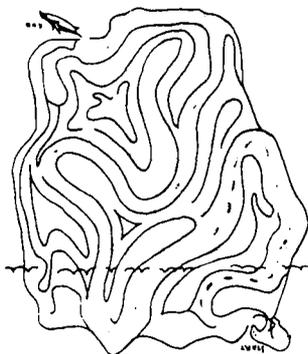
Chinstrap

### BEAR FACTS

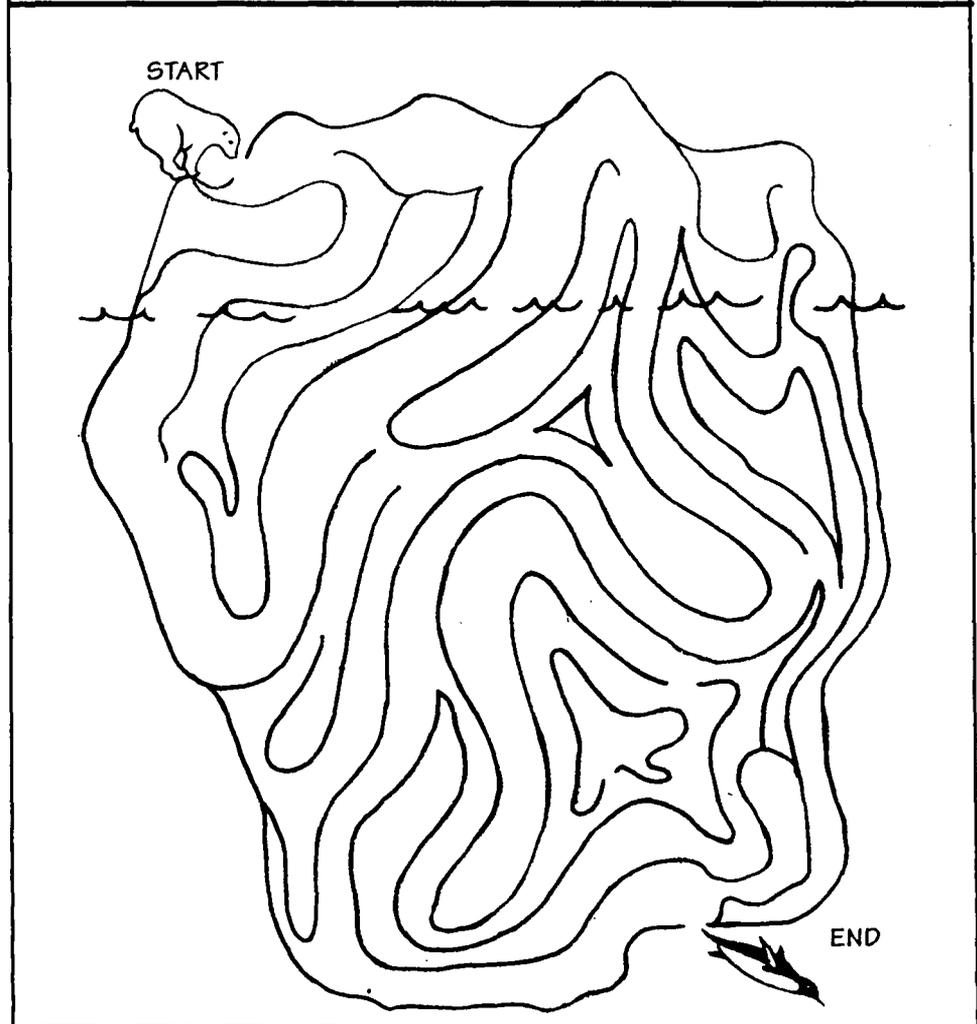


The polar bear looks white from even a short distance, yet each individual hair is a clear, hollow tube. Light bouncing off the jumbled angles of all the hairs creates the snowy illusion.

### MAZE ANSWER



### ICEBERG MAZE



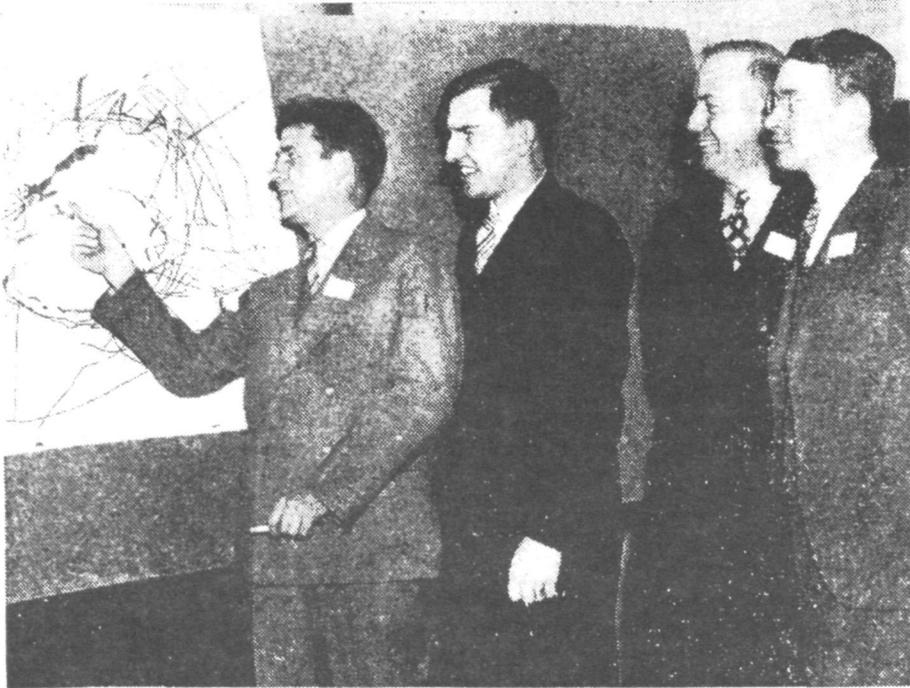
## A Page From the Past

DECEMBER 1936.

THE POLAR TIMES

4

## Byrd's Aides Have Reunion as Geographers Meet



These "Byrd-men" who shared the rigors of the Antarctic with Admiral Byrd were snapped yesterday looking at a map of Little America in an informal reunion at the Association of American Geographers conclave at the Onondaga. Left to right, are: Dr. Laurence M. (Larry) Gould of Carlton college; Paul Siple of Clark university; Dr. Thomas C. Poulter of Chicago and Alton Lindsey of Cornell university.

## MAP ERRORS LAID TO POLAR MIRAGE

Hobbs of Michigan Explains  
Before Geographers Weird  
Arctic Phenomenon.

SYRACUSE, Jan. 1.—Stories of "polar mirages", which have thrown explorers' calculations askew for many years and led to mistaken "discoveries" of land enlivened sessions of the Association of American Geographers here today.

Headed by Professor William H. Hobbs of the University of Michigan, the association's president, distinguished explorer-scientist, told of seeing glaciers that were actually far under the horizon, of watching Eskimos hunting "in the air" 200 miles away and of spotting a lighted candle from a distance of nine nautical miles.

Recent recognition of the polar mirage, which is as deceiving as, although of different sort from, the desert mirage, marked an important step in polar research, Dr. Hobbs said in a paper on "An Optical Phenomenon and Its Relation to the Discovery of Polar Lands."

### Early Errors Accounted For

For centuries explorers have been "discovering" land that wasn't there and mapping mountainous terrain that later explorers "sailed right through" and learned was 200 to 300 miles farther away than charted. Many early mistakes in map making are being corrected

now that scientists have hit upon the trouble.

Several explorers who suffered loss of reputation when their discoveries were found to be incorrect are now known to have been victims of mirages.

Light rays bending concavely from a "mirror" formed by contact of air masses at different densities cause objects 200 to 300 miles away to be reflected, and as clearly as if they were but twenty miles off, Dr. Hobbs explained.

The polar mirage presents an image as high as three quarters of a mile from the earth's surface, he said. Desert mirages reflect nearer objects which are visible at low altitude.

Dr. Hobbs told of being deceived by mirages on a Greenland expedition, when the party was on Mount Evans with a tested horizon visibility of only a dozen miles.

"On certain days," he said, "wholly new panoramas would unfold before our eyes, glaciers far below the horizon and far-distant landscapes would be clearly visible."

### Saw Hunters 200 Miles Away

From Dr. Elmer W. Elkhblaw of Clark University came a story of having watched Eskimos hunting on the shore of Greenland 200 miles from the point of observation.

Counting lighted candles spaced a mile apart for nine nautical miles along the Ross Sea ice barrier on an Antarctic winter night was the experience of Dr. Thomas C. Poulter, senior scientist and second in command on the Second Byrd Antarctic Expedition.

The candles, Dr. Poulter related, were used as guiding beacons when he and two companions made their 323-mile trek from Little America to rescue Admiral Byrd at his soli-

tary base on Aug. 11, 1934.

Dr. Lawrence McK. Gould of Carlton College, Admiral Byrd's lieutenant on the First Antarctic Expedition, and O. M. Miller, geographer and explorer, were also speakers.

## Unexplored Areas Still Beckon to Adventurers

Challenge of two large unexplored Arctic areas which still beckon to polar adventurers probably will be answered by men in airplane or submarine, Dr. William H. Hobbs of the University of Michigan predicted last night.

In his presidential address at a banquet of the Association of American Geographers in three-day conclave at the Onondaga, the noted geologist reviewed progress of discovery and exploration in the Arctic region since the pioneer polar observations of Pytheas in the fourth century before the Christian era.

Early sailing voyages, treks across icy wastes by dogteam and sledge and more recent airplane expeditions have given man fairly complete maps of far northern geography, he said, but two little known areas remain. They lie largely within the East Siberian sector and Alaskan sector of the Arctic and never have been explored even by reconnaissance, he pointed out. Even the smaller of the two areas is large enough to include the British Isles, he estimated.

Cloudy mists which envelop the uncharted areas for much of the warmer season make flying visibility poor and plane trips had best be taken in late winter or very early spring, according to Dr. Hobbs.

"Ideally suited for exploration

## POLAR WEATHER UNITS PLANNED BY WILKINS

Explorer Says Fixed Stations  
Are Needed—Would Use Special  
Submarine for Task.

Sir Hubert Wilkins, explorer of the Arctic and Antarctic regions, outlined plans to establish weather observation stations in these areas in an address Dec. 8.

After telling of his experiences in the vicinity of the North and South Poles Sir Hubert said he planned to investigate aerial conditions there either next year or the year after.

He reviewed the conditions that have made it necessary to establish fixed observation posts for climatic and wind changes in order to prognosticate weather conditions affecting the whole world. He explained that it would be difficult to set up fixed posts in many of the Arctic localities due to their peculiar conditions and proposed that a submarine especially equipped for this purpose be employed. He emphasized his desire to carry on special investigations in meteorology rather than to reach either the North or the South Pole.

"Scientific investigation of these sources requires fixed spots," he declared. "Consequently a seagoing vessel of the submarine type would be needed, as a surface vessel cannot proceed beyond a point some 450 miles distant from the North Pole."

He said the special type of submarine he planned to use was "one which would slide along the bottom in a manner similar to that in which another vessel goes along the surface of the sea."

## ESKIMOS TRICK WOLVES

Put Whalebone in Tallow Bait to  
Kill Marauders of Deer.

POINT BARROW, Alaska, Dec. 5 (AP).—An old Eskimo trick today helped natives turn back wolf packs which had repeatedly stampeded 3,000 reindeer being driven across 500 miles of Arctic wasteland to Barter Island.

Chunks of frozen tallow were dropped for the pursuing wolves to snap up. Inside each chunk the Eskimos had bent a six-inch piece of whalebone, sharpened to a needle point.

When the tallow melts the whalebone springs open, piercing the wolves' stomachs, and slow death is their fate.

Deer for the Barter Island drive were taken from the Point Barrow herd. Several hundred natives and a few whites were reported near starvation in the Barter Island area last summer.

Griswald Collins, a veteran game warden sent from Juneau to investigate and try to destroy the wolf packs, said he believed that the Eskimo method of killing wolves would prove effective.

within these areas" would be a submarine especially designed for polar navigation, he asserted, and he predicted that Peary's "Crocker land" which is thought to lie within the unexplored section will be discovered either from a plane or submarine.

## Quick News . . .

### Greenpeace Activist Saved . . .

*Ice Cap News*, April-June 1995, p. 75, submitted to that publication by Peter Barretta Jr.—A Norwegian whale hunter used force Saturday to prevent Greenpeace activists chained to his ship from stopping him from hunting whales.

A police spokesman said the incident in the Arctic port of Tromsø ended without violence and "everything went peacefully." But TV cameras showed Steinar Bastesen, chairman of the whaling association, trying to throw one woman overboard.

Bastesen was forcibly prevented by an environmentalist from tossing the screaming woman into the sea. □

(This information appeared in *The Washington Times* in June 1995.)

### Russian Findings Based on Study of Remains . . .

*Ice Cap News*, April-June 1995, p. 50, submitted to that publication by Julius Rockwell—Challenging established theory, Russian scientists say prehistoric elephants survived the end of the ice age and roamed the Earth an additional 6,000 years before a more formidable foe came along: man.

Their findings are based on the remains of 23 mammoths found on Wrangel Island, in the Chukchi Sea between northeast Siberia and northwest Alaska.

Russian researchers at St. Petersburg State University say they ran radiocarbon tests on the fossils and then sent the fossils to the University of Arizona so scientists there could do the same. □

### Italy and UK Ratify Protocol

*The Antarctica Project*, May 1995, p. 4 (contributed by Charles Webb)—Italy and the United Kingdom recently became the 15th and 16th nations to formally ratify the Antarctic Environmental Protocol.

The UK also became the fifth nation to enact implementing legislation for the Protocol, making its provisions binding in domestic law. Passage of Italian legislation is possible later this year. Norway became the sixth nation to pass legislation. Norway ratified the Protocol in June 1993.

The Protocol must be ratified and implemented by all 26 Treaty nations before it enters into force. Italian and British ratification leaves 10 nations, including the United States, that must still ratify the agreement. □

### Creagh Icefall/Glacier

At the request of the American Polar Society and numerous scientists and sailors who have attended services at the "Chapel of the Snows" in McMurdo Sound, Antarctica, two features in Antarctica were named for Father "Gerry" Creagh, the "Chaplain of Antarctica": Creagh Ice Fall (78° 02' S, 161° 08' E) and Creagh Glacier (78° 01' S, 161° 10' E). The features have been drawn in on the Spire Quadrangle chart published jointly by the U.S. Geological Survey and the New Zealand government. □

(Ed. Note: See Obituaries, Fall/Winter 1994, *The Polar Times*)

### Eskimo Cuisine in Fine Restaurants?

*Ice Cap News*, April-June 1995, p. 48, submitted to that publication by Alan Warren—The native peoples of northern Canada are exploring the possibility of offering game birds, caribou, seal and Arctic hare on the menus of some American and European restaurants, thus creating an export market and much needed jobs. The Makivik Corporation, an economic development agency organized by the Nunavik Eskimos of northern Quebec, invited several well known chefs including Paul Bocuse of France, to Kuujuaq, 1,000 miles north of Montreal, to sample Arctic cooking.

The guests tasted smoked seal, narwhal in vinaigrette, roasted rock ptarmigan and stuffed roast caribou, among other dishes. The fare was prepared by Canadian chef Jean-Paul Grappe, who teaches at Montreal's Institute of Tourism and Hotelkeeping.

Since the natives eat much of their meat raw, the chefs discussed ways to cook the various dishes and to prepare sauces that would make the attractive to diners in European and American restaurants. They are already planning marinated caribou, Arctic hare ragout and marinated seal.

Provincial laws are being enacted to permit the export of caribou steaks and roasts as an initial step in the process. The project would also help thin caribou herds in the Ungava Bay area. The Makivik Corporation will proceed slowly with the project, recognizing it may have an adverse reaction from environmentalists and animal rights advocates. □

(This information was summarized from an article which appeared in the March 8, 1995, issue of *The New York Times*.)

## Book Reviews

*My Life of Adventure*, by Norman Vaughan. From "The North in Print," *Alaska*, August 1995, p. 62. Jill Shepherd, reviewer (contributed by Peter Barretta Jr.)—For Alaskan Norman Vaughan, his 1994 ascent of a previously unscaled Antarctic mountain at the age of 89 was an expression of his personal philosophy: "Live adventurously." Since it was his second attempt in 12 months, reaching the summit also illustrates this man's incredible perseverance.

Vaughan's parents assumed he would outgrow his daredevil ways, but he never did, and the proof is in his richly detailed book, *My Life of Adventure* (Stackpole Books: Mechanicsburg, Pa. 17055; May 1995. 256 pages, plus a 32-page section of photos. Hardcover, \$24.95. Available from bookstores, or directly from the publisher: (800) 732-3669).

Some authors write about history; Vaughan not only lives history, he makes it. He twice dropped out of Harvard to fulfill his dream of being a dog musher: once to help bring medical care to isolated Newfoundlanders, the second time to go to the South Pole with Admiral Richard Byrd. He represented the United States in a dog-mushing exhibition at the Olympics. An expert skier, he published his first book, *Ski Fever*, in 1936.

As an Air Force officer in World War II, Vaughan organized dog-team and ski rescues in snow country—in Canada, the United States and Europe. While in command of a weather outpost in Labrador in 1942, he organized the dog-team rescue of 25 Air Force men whose eight planes had been forced down in Greenland by bad weather. It was the largest rescue of stranded airmen in the war. After the war he ran the United Nation's search-and-rescue unit.

After visiting Alaska for 20 years, Vaughan made a permanent move in 1973. He was broke and out of work, but, as he writes, "Life was beginning all over again." Since then Vaughan has run 13 Iditarod races, taught Pope John Paul II how to mush and made 12 expeditions to salvage the aircraft from the Greenland crash site where he rescued the airmen in 1942.

This is no mere memoir, but a rollicking, well-written adventure story that's packed with inspiration and humor.

Vaughan wrote the book with Cecil B.

CONTINUED FROM PAGE 19

Murphey, a writer who lives in Atlanta. The pair also are the authors of *With Byrd at the Bottom of the World*. □

*Water, Ice and Stone*, by Bill Green. From *The San Francisco Sunday Examiner & Chronicle*, July 9, 1995. Charles Petit, reviewer (contributed by Gordon Fountain)—The perennially ice-covered lakes of Antarctica's dry valleys are among the strangest, loneliest places on Earth.

Their haunting otherworldliness might seem to make them poor sites for learning the universal rules that govern the rest of our planet's oceans and lakes. But for nearly 30 years, geochemist Bill Green has gone to these remote bodies of water, lowered instruments through holes cut in their thick frozen surfaces and accumulated not only unique data but a remarkable and at times ecstatically spiritual understanding of the profound connectedness of our world.

*Water, Ice and Stone* is nature writing of a very high order. Readers who do not enjoy sharing a scientist's communion with natural creation, complete with little insights and major soul-shaking epiphanies, should stay away. What one gets is a long meditation on wonder, discovery and doubt. It is thick with a sincerity that may put off some readers, but it will be a joyride for those who enjoy deep explorations of logic, human frailty and the laws of nature.

Green strings a straightforward narrative through the book. At the start, he is at home at Miami University in Ohio, saying goodbye to his wife, family and colleagues. He explains how, on the south polar continent, there are lakes of a startling simplicity. They have a few streams trickling in, hardly any life except blue-green algae matting their bottoms, are protected from glaciers by the shielding Asgard Range in the TransAntarctic Mountains and possess utter clarity of water due to their lids of thick ice.

So, he reasons, the cycles of sedimentation and reactions that control the chemistry of oceans and lakes in more complicated places—basically everywhere else on Earth—might be laid bare at these few lakes in southern Victoria Land.

Off Green goes with National Science Foundation grants, flying on Air Force and Navy planes to McMurdo Station, thence via helicopter to the valleys. He and colleagues set out instruments, endure howling winds and temperatures to 40 below zero and overcome glitches and frustrations.

A colleague gets a bad case of the willies.

Disoriented and terrified by Antarctica's uncaring emptiness, he nearly flees. But, emotionally ambushed by a letter from home, he stays and provides vital data from a creek, named Dana after Green's daughter, that warms enough for a few weeks each year to flow into Hoare Lake.

But the soul of the book is not in its narrative. It is in the asides and ruminations on life, science, fate and the nature of discovery.

Mostly, Green is impressed that the study of small things can reveal greater things. "And who are we that we should know these things?" he muses. "That out of the mingling of water and stone, out of the touch of sunlight, out of the carbon drawn in long chains, out of the mats of heme, the iron and manganese, the calcium and magnesium of ancient seas, the seas of our life's blood; that out of the helices and rings of matter, we should dream these dreams...which link us irretrievably to all that is."

Green is a chemist. It is not surprising that he empathizes with molecules and reactions. His descriptions, however, are like no textbook's.

Telling how an Antarctic lake's cycles tie into the larger space of the whole world, he vividly imagines the arrival in the lake of fresh minerals from a tiny stream: It was "sound, and it was light, but it was also the head over heels tumbling of each water molecule, the combined energies of those molecules, their separated charges like torchfires burning at the tips. What sound did the loosening of cobalt make the adsorbed ion wavering a little like a minnow at the surface of a rock, then heading off downstream?...The cobalt all the while clinking, being basketed and woven in like Moses by the manganese."

He concludes, "If these journeys and cycles were not science, we would call them myth." □

AN ANTARCTIC DIARY, reviewed by Brian Shoemaker

*An Antarctic Diary* by Charles F. Passel: The Four-O-Imprint, 1984. 386 pp. Hardbound.

*Ice: The Antarctic Diary of Charles F. Passel*. Edited by T.H. Baughman: Texas Tech University Press, 1995. 480 pp. Cloth. U.S. \$29.95.

Explorer, scientist, humorist—Charles Passel is not as well known for any of these titles as many of his contemporaries; I understood why after reading his book, but also feel a sense of injustice at the same

time. He was a member of Admiral Byrd's Third Expedition to Antarctica from 1939 to 1941. He made an 800 mile dog sled trip over unmapped and unexplored terrain from Little America III into the Edsel Ford Mountains to chart their geological structure—a major scientific and exploratory achievement. During the Antarctic winter of 1940, he and Paul Siple, the Station Leader, collected freezing data, collated it and developed the *Wind Chill Factor* and *Wind Chill Chart*—an enduring scientific achievement, still used unmodified by meteorologists for forecasts and broadcast to us over television during the winter to enable us to decide whether to allow the dog to sleep inside or to get up and go to work.

Anyone who reads Charles Passel's diary, however, will agree that Charles by nature is a humorist in the tradition of Mark Twain—perhaps more so because Charles wrote of events as he experienced them with no intent to publish. He returned from Antarctica and went to war, locking his mementos, research papers and his unedited diary away until he came back home. In 1984 he presented raw diary to his daughter Charlotte Passel for publication.

*An Antarctic Diary* was written daily as events occurred and transcribed verbatim by Charlotte with minor spelling and punctuation corrections; there is no recreation of events, no dramatization, and no reflection—simply the words of a man who views life with great humor and vitality, as a challenge to be lived and to be enjoyed.

Passel goes south on the from Boston on the overloaded *North Star* via Panama, Pitcairn and New Zealand chronicling the cramped conditions and confusion that ensued when a ship loaded with too many men and twice as many dogs hits rough weather. The first sighting of an iceberg enroute from New Zealand, "It was a pretty sight to see all of the fellows disappear then all run up forward with their cameras...the *U.S. Antarctic Photographic Expedition* because everyone and his brother has a camera."

He treats all to the experience of trying to organize the dog teams after unloading on the Ross Ice Shelf, "Never seen a more stubborn dog than (the lead dog) King. We would yell *yak* and he wouldn't budge and the rest of the team would run over him...if we were lucky enough to start him, when we wanted to stop him (yelling *whoa* wouldn't do the trick), we would have to run him into something...Richardson had quite a time ... he rode on all parts of the sled trying to stop his dogs, control them;

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## EDITORIALS

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### *The Treasure in the Arctic*

*The Baltimore Sun*, Aug. 25, 1995, p. 15A, by Bruce Babbitt (contributed by Peter Barretta Jr.) WASHINGTON—The Arctic National Wildlife Refuge is the last protected fragment of the great coastal plain where North America slopes down to the polar ocean. more than 85 percent of this unique area is already open to oil exploration and development.

But apparently that is not enough.

Certain segments of the oil and gas industry, emboldened by electoral changes, are now asking for everything—for the right to invade our last Arctic sanctuary for the sake, even by the most optimistic estimates, of six months of national oil consumption.

One night at Peters Lake, I read the words of author Barry Lopez: "Twilight lingers—the ice floes, the caribou, the musk oxen, all drift, the stillness, the pure light—you can feel the silence stretching all the way to Asia."

Should Congress vote to end the longstanding protection of the heart of one of our premier wildlife refuges, it will inevitably shatter the balance of land and life into a thousand fragments.

Advocates of opening the Arctic refuge to oil development often have based their argument on national security. This argument is weak because no single oil discov-

ery, even a large one, would fundamentally alter our nation's oil-security situation.

The Clinton administration recognizes the importance of U.S. energy security and will continue to support steps that, as shown by past experience, can help us minimize the risks associated with short-term supply disruptions. Sacrificing the Arctic refuge is not one of them.

Drilling proponents also have tried to argue that exploring, producing and shipping oil on the fragile Arctic coastal plain can be accomplished without damage to the wildlife values that the refuge was estab-

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*That revenue projection contains more than its fair share of wishful thinking.*

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lished to protect.

But their "environmentally safe" argument is as empty as the "national security" one. The Alaska congressional delegation wants to change the name of the Arctic National Wildlife Refuge to the "Arctic Oil Reserve."

As their key arguments collapse, oil-development proponents have resorted to

arguing that opening the refuge would raise \$1.4 billion for the U.S. Treasury over a five-year period. That revenue projection contains more than its fair share of wishful thinking. It assumes that the Treasury will get one-half of any lease-sale revenue. Yet the state of Alaska maintains that it is guaranteed no less than 90 percent under the Alaska Statehood Act and is suing the federal government to confirm this principle. If that holds, the projections for the U.S. Treasury drop to \$280 million.

Lastly, new information has led the U.S. Geological Survey to conclude that earlier high estimates of petroleum resources should be revised downward. In short, those who would open up the coastal plain can no longer argue on the grounds of national security, environmental safety or fiscal responsibility.

What's most disappointing, though, is that they simply miss the larger, long-term and ethical vision. Opening the Arctic Wildlife Refuge to oil drilling is the equivalent of offering Yellowstone National Park for geothermal drilling or calling for bids to construct hydropower dams in the Grand Canyon. We can, and surely will find a better way both to produce energy and conserve our natural heritage. □

(Ed. Note—See "Oil Drilling," p. 14.)

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### *"A Proposal For a Series of Well Organized and Properly Equipped Scientific Expeditions to the Antarctic by the Canadian Scientific and Academic Community"*

By Austin Albert Mardon, Antarctic Institute of Canada—Canada is the sole nation with a large Arctic hinterland with a fleet of icebreaking vessels that has totally ignored the Antarctic continent in this century. We should, indeed, we must become active and take our share of unlocking the keys to the silent continent.

This total lack of interest by Canadian authorities and the Canadian scientific community is shocking. We have developed numerous polar (arctic) specialists in many fields and some unique technologies. Many indigenous Canadian Arctic specialists and biologists and polar experts have been and still are vehemently opposed to venture into the Antarctic polar region or organizing any program. Why is this so?

Canada's Polar Continental Shelf Project

(PCSP) covers and supports Canadian and international scientific projects, expeditions and research projects in the Arctic Archipelago, including Baffin Island, Ellesmere

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*... it would permit dozens of Canadian scientists, geologists, biologists and Arctic experts a chance to do annual work in Antarctica . . .*

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Island, Melville Island and also portions of the vast Northwest Territories in the High Canadian Arctic.

Many scientific groups from nations with active Antarctic programs are using their infrastructure in PCSP without reciprocal assistance for Canadian scientists desiring to join these nation's Antarctic programs. Even if simple exchange programs existed with those countries using PCSP, it would permit dozens of Canadian scientists, geologists, biologists and Arctic experts a chance to do annual work in Antarctica, surrounding oceans, seconded to other nations Antarctic expeditions or permanent stations. A proper system of exchange of personnel could exist without any large increase in funding.

This unwillingness to support "individual" scientists exists without any ratio-

**CANADIAN—CONTINUED FROM PAGE 21**

nal base. The author of this article has been informed on several occasions at international conferences and [via] personal mail by members of foreign scientific organizations or foreign government representatives that this modest proposal could become a reality with a letter from a Canadian Department of External Affairs high-ranking official. Speedy invitations from foreign Antarctic nations for Canadians to join would be forthcoming. The problem is not with expeditions from nations already active in Antarctic research but with the Federal Canadian government.

A Canadian year-round experimental sta-

tion could exist within months with a small amount of money or effort. Canadian Arctic floating experimental vessels are only used for the few Canadian Arctic summer months. Could not these vessels go to southern polar seas during our long winter rather than sitting in some dock? We have all kinds of expensive special equipment idle for more than half of the year, which is most wasteful.

Nations with year-round Antarctic stations include...Russia, United States, China, Argentina and New Zealand. Most or all of these countries, in this post-Cold War era, would be happy to share facilities and logistical structures with Canadian scientists. □

**PASSEL—CONTINUED FROM PAGE 20**

he even rode underneath and with the sled upside down."

The humor of his love affair with Alda by primitive radio is woven throughout the narrative—the most intimate messages are received by radio operators, radio interference interrupts dialogue and total communications blackouts heighten the anticipation of whether Alda is really pining away waiting for him to return [the reader will have to find that out for himself].

The personalities of 33 men are exposed in a witty manner by observation and close interaction. Little America III was snowed over, the buildings buried with men and dogs crammed together in an underground complex for over a year. Daily temperature runs for the wind chill chart outside in temperatures as low as minus 73 degrees below zero, the frostbite, getting lost while traveling on the barrier during the long night, medical experiments on everyone by the doctor, exploration and geological research in the field, the birth of new pups, and other events are treated succinctly with dry wit.

"The show tonight was a reshoot of *Dodge*

*City*—sixth time for me. Gosh, it will be funny getting back home and seeing a show only once," is but one example of a way of life that has disappeared from expeditions since the advent of satellite television beamed to the continent. "I went down to feed my dogs. I always like to spend half an hour or so in the tunnel talking it over with my pups. They seem so glad to see me it is really inspiring." A warm commentary from yesterday—dogs are banned from Antarctica together with a way of life they evoked.

Not only humor but day to day history of an expedition written in a manner that no official report could record and no outsider ever could capture. To be read a day at a time just before bed which is when Charles usually put pen to paper.

Postscript: I read *An Antarctic Diary* after cajoling a copy from Charles and had made my mind up to do a review. As we went to press I was telephoned by Texas Tech where the story has been edited and will soon be published as *Ice: The Antarctic Diary of Charles Passel* and asked to do a review. Both are outstanding and virtually identical. □

**REUNIONS****Polar Veterans Meet at Hilton**

(Contributed by Capt. Allan Brier, USCGR (Ret.)—The Valley Forge Hilton was the meeting site for a unique group of polar veterans. On June 23-25, 1995, the ship's force that took the Coast Guard Icebreaker *Eastwind* (WAGB-279) to the Arctic in war and in peace, and to the Antarctic as well, had their first icebreaker Reunion. The *Eastwind* held many unique records, including farthest north of any vessel under power and the first U.S. warship to capture an enemy warship in combat since the War of 1812.

Jerry Rowan, a Phoenixville, Pa., resident, got the reunion started after showing slides of Operation Deepfreeze I to his youngest daughter's school class. RADM R.E. Byrd had been aboard *Eastwind* during Operation Deepfreeze I, and it was the admiral's last visit to Antarctica.

This gathering included over five dozen former crewmen. The youngest attendees participated in the decommissioning of the ship in 1968. Some of the oldest attendees were part of the shipyard force that built the ship and attended the launching in 1994 in California. □

**Apology to  
Gordon Wiltsie**

We forgot to list his photo credits for Norman Vaughan's picture on the cover of our last issue.

Thanks, Gordon. We're very grateful.

Sincerely, Della Westar

**OBITUARIES****Max Dunbar**

*Daily Telegraph, March 10, 1995*

Max Dunbar, who has died in Montreal aged 80, was a distinguished marine biologist and oceanographer and an early expert on the effects of climatic change. On his first polar expedition, in the summer of 1935, Dunbar was the zoologist on a four-man Oxford University expedition to survey for a suitable airfield site in West Greenland....

Maxwell John Dunbar was born in Edinburgh on Sept. 19, 1914, and educated at Fettes College and Brasenose College,

Oxford. A year after his first expedition, he returned to West Greenland with Air Chief Marshal Sir Christopher Hartley. The two made hydrographic and biological studies in the waters off the Christianshab region, particularly in the "feeding zones" at glacier faces. After graduating in 1937, he spent a year on a research fellowship at Yale University before moving to McGill University, where he gained his PhD in 1941.

He had spent the summers of 1939 and 1940 as a scientific observer in the Canadian government's Eastern Arctic patrol ship, which served as a relief for remote

stations. From 1941 to 1946, Dunbar served the Department of External Affairs as Canadian Acting Consul to Greenland at Godthåb and at Nuuk, West Greenland, a post for which he was ideally suited: he was socially adept, spoke fluent Danish and knew the region well. In addition to his official duties, he continued his biological work in Godthåb Fjord. In 1946, Dunbar joined the McGill University science faculty. Thirteen years later he was appointed professor of oceanography, a post he retained until his retirement in 1982. □

## LETTERS TO THE EDITOR

Dear Editor:

Your splendid issue, with my great friend Norm Vaughan on the cover, [and] a number of items in this issue are of keen interest to me. I plan to comment on them in a proper letter.

C.D. Cartwright  
Geneva

Dear Editor:

It was with the greatest of pleasure that I read the new issue of *The Polar Times*. I enjoyed all the articles, but regret to learn that the South Pole Dome is to be dismantled and removed. When I went through it in January 1995, I had no idea that it would disappear. But it was a comfortable place to see. I was very proud of the U.S. presence and what our scientists are doing at the bottom of the world.

How can you publish *The Polar Times* for only \$10 a year? I would be glad if the dues were increased to \$25.

Alston Callahan, M.D.  
Birmingham, Ala.

Dear Editor:

Recently a friend passed on a copy of *The Polar Times*, and I found it both interesting and informative.

Laurie Dexter  
Fort Smith, N.W.T.  
Canada

Dear Editor:

Just received and devoured the current edition of *The Polar Times*. I am glad the APS came back to life with a roar and that the publications are as good as ever.

I suggest you send a flyer for members to buy gift memberships for friends at Christmas. Ten dollars is just right for many budgets.

Joe Rychetnik  
Palm Springs, Ca.

SECRETARY'S REPLY: Done! Check your envelope. *BS*

Dear Editor:

I went to Antarctica in December 1946 with Operation High Jump, Task Force 68. I was on the *U.S.S. Sennet* (SS408). We were the only submarine with the operation and the first USN submarine to go to the South Pole at that time. Sign me up in the American Polar Society. My check is enclosed.

Bob Wiley

Dear Editor:

This [letter] concerns the Spring/Summer '95 (p. 4) story on the late 1990 discovery by Dave Elliot of the *Cryolophosaurus elioti*. Specifically, this letter deals with the statement by William Hammer in the second column which is, in part:

"This is the first dinosaur find on the mainland of Antarctica...."

I have some problem with that statement, depending on one's understanding of what defines a dinosaur. The dictionary names it a "terrible lizard." Initial investigation of Mesozoic lizard fossils in Antarctica followed the discovery at Graphite Peak in 1967 by Peter Barrett [of] a fragment of the jawbone of a tetrapod amphibian. I believe this was the first fossil bone discovered in Antarctica. In the 1969-1970 austral summer, a group of scientists, organized under the same David Elliott for whom *Cryolophosaurus elioti* is named, investigated in detail various early Triassic fossilized bones at Coalsack Bluff in the Fremouw Formation of the Transantarctic Mountains. Here, on 4 December 1969, Ned Colbert first positively identified the Lower Triassic reptilian genus *Lystrosaurus*. The Coalsack Bluff fossils were "isolated and rolled bones deposited in course [sic] sands and even conglomerates."

In the 1979-1971 austral summer field season, Jim Kitching of Witwatersrand University in South Africa, with other vertebrate paleontologists, continued the tetrapod investigation at McGregor Glacier. Here, articulated fossil skeletons were found in abundance, not only of *Lystrosaurus*, but others also representative of the South African *Lystrosaurus* zone. These discoveries had momentous significance in connecting Antarctica paleontologically with other southern continents, especially South Africa, in the early Triassic period of the Mesozoic era.

Elliott's Mount Kirkpatrick discovery of the Jurassic period dinosaur plus the prosauropod bones found with it, is indeed important. Let us hope that such investigations are continued in the future.

In preparing the foregoing, I have liberally used information from Ned Colbert's 1971, 1972 and 1973 articles published in the *Antarctic Journal of the United States*.

RADM David Welch, USN (Ret.)

Former commander,  
"Operation Deep Freeze"

SECRETARY'S REPLY: Good science review; you missed your calling. *BS*

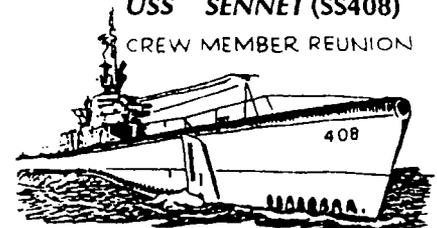
## ANNOUNCEMENTS

INTERNATIONAL ARCTIC  
SCIENCE COMMITTEE (IASC)  
Arctic Planning Conference

5-9 December 1995  
Hanover, New Hampshire  
APPLY: IASC Conference  
Polar Research Board  
National Academy of Sciences  
2101 Constitution Ave. NW.  
Washington, DC 20418  
(202) 334-1477

OPERATION HIGH JUMP  
USS SENNET (SS408)

CREW MEMBER REUNION



OPERATION HIGH JUMP  
TASK FORCE 68

50th Anniversary Reunion

Week of Oct. 13, 1996  
Norfolk, Va.

Contact: Don Leavitt  
2109 Grand Ave., Morton, PA 19070  
Or call or fax 610-461-1623

OPERATION DEEP FREEZE 66  
BYRD STATION

Winter-Over Crew

Place: Shelter Island, N.Y.

Date: 21-23 June 1996

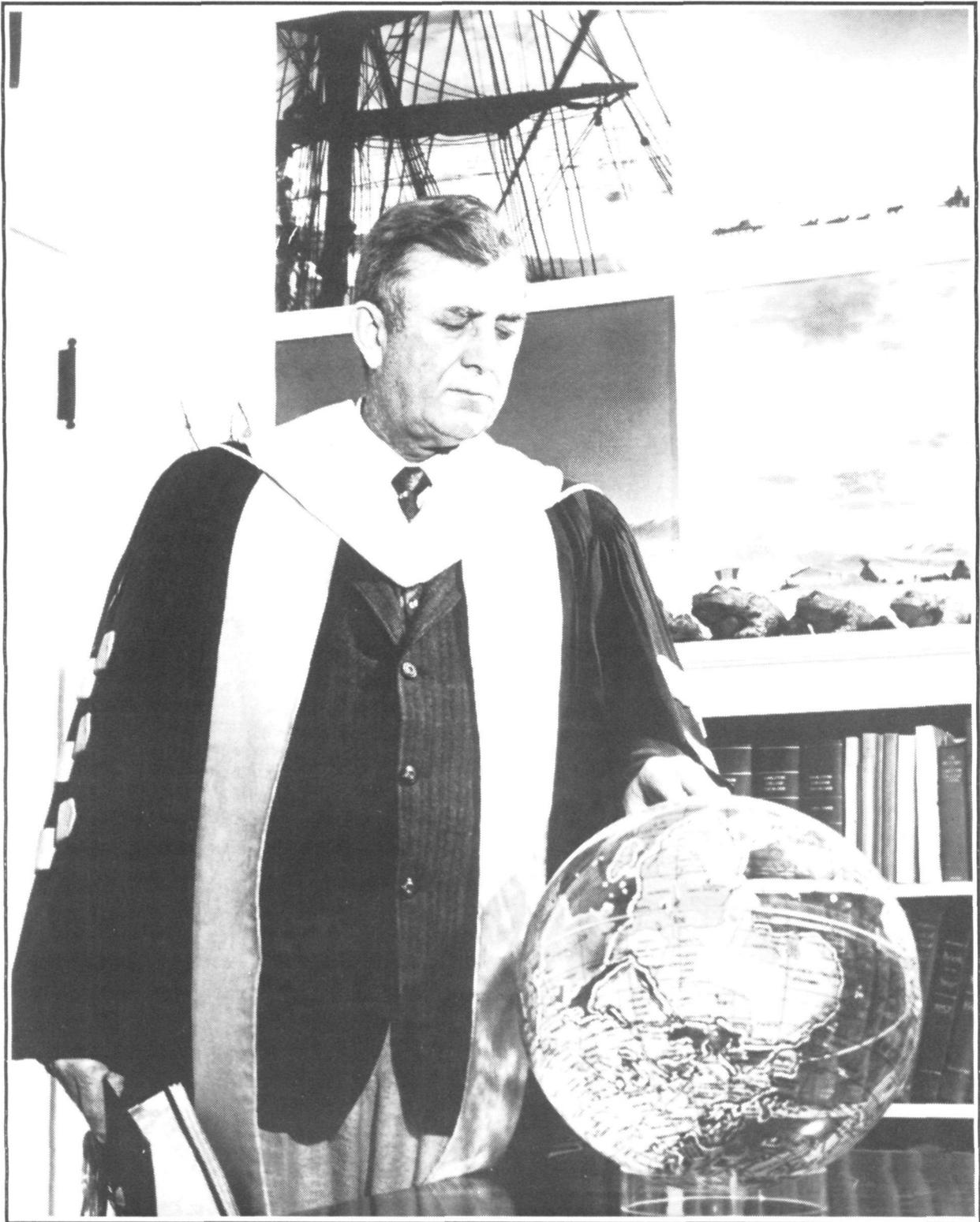
Contact: Gordon Callender  
4116 Croydon Road, Pensacola, FL 32514  
Ph: 904-857-1086

WIND CLASS ICEBREAKERS

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

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

*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 reunions, for members of polar expeditions. Then, after the celebration, we will carry an article with the details of the get-together.*



All photos of Larry Gould provided courtesy Carleton College

“The World According to Gould”