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THE POLAR TIMES

Dr. Thomas Charles Poulter

March 3, 1897 — June 14, 1978

Vice President of the American Polar Society since 1945

National Oceanic and Atmospheric Administration

The Polar Times

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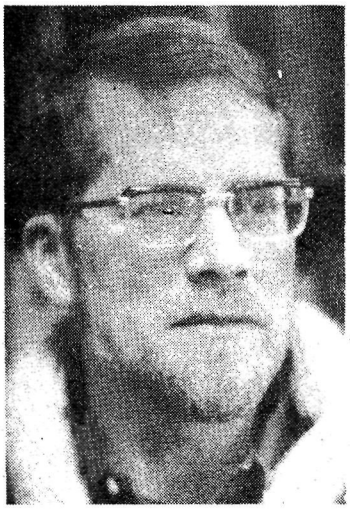
Hunt Receives Humanities Forum Honor



WILLIAM R. HUNT
Humanist Of The Year

William R. Hunt, professor of history at the University of Alaska, Fairbanks, has been named Humanist of the Year for 1977.

He was selected by the state committee of the Alaska Humanities Forum in recognition of "major contributions to the understanding of public policy issues in Alaska" through published writings and community service.

The award will be presented to Hunt at the annual Alaska Humanities Forum banquet next Friday in Juneau. He will speak on "Changing Alaska: Land and Community."

His most recent book, "Alaska: A Bicentennial History," was published by Norton in 1976 and is scheduled for paperback distribution later this year."

Other publications by Hunt include "North of 53," a social history of the Alaska-Yukon gold era; "Arctic Passage," a history of the Bering Sea frontier; and "Getting Passionate about Alaska," a leading review article in the Jan. 14 issue of "The Nation."

He has just completed a biography of polar explorer and advocate Vilhjalmur Stefansson, and he has researched political history of Susitna hydroelectric power, aquaculture in Alaska, historic ice conditions in the Beaufort-Chukchi seas and the state's historic rights in Cook Inlet quiet title litigation.

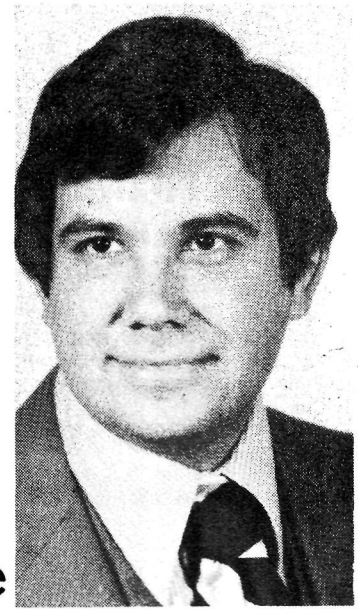
In 1976 he was chosen historian of the year by the Alaska Historical Society.

Hunt has been teaching at the University since 1967, after receiving a doctoral degree from the University of Washington. He lives in College with his wife and three children.

Last year's winner of the Humanist of the Year award was Robert Arnold of the Alaska Native Foundation.

March 24

Eskimo Utilizes Medical Degree



DR. THEODORE MALA
First Male Eskimo Physician

Dr. Theodore Mala, first male Alaska Eskimo physician, is special assistant in Health Affairs with the Alaska Federation of Natives and will serve as interim chairman of Sheldon Jackson College's statewide health advisory board directed towards rural Alaska needs.

Originally from the Kotzebue area, Mala graduated from DePaul University, Chicago, Ill., and received his medical degree from Autonomous University, Guadalajara, Mexico in 1976. He is a member of the American Association of Indian Physicians and a member of United Way Fund's Anchorage board of trustees.

Mala participated in the fourth Alaska Health Congress earlier this month at the Captain Cook Hotel, which examined health organizations in relation to the diverse people and geographical distances in Alaska. He was a panel moderator and spoke on the role of the Alaska Federation of Natives in rural health care. He also outlined the history of the federation, which was a co-sponsor of the health congress.

Mala's father, Ray Mala, starred in a 1930 film, "Eskimo," made by Metro Goldwyn Mayer in Point Hope and Teller, which also featured author-explorer Peter Freuchen in the cast. Alaska natives were in most of the roles and they spoke their parts in an Eskimo language. The film is still considered to be an excellent documentary of Eskimo life, of that period, according to an Alaska Federation of natives spokesman.

May 31

The Anchorage Times

Andrus Cites Value Of Arctic Range

WASHINGTON (AP) — The greatest resource of the Alaska National Wildlife Range lies on its surface, according to Interior Secretary Cecil D. Andrus.

The Carter administration has asked Congress to designate the 8.9 million-acre wildlife range, on Alaska's Arctic northern slope, as a wilderness area and to expand it southward.

The range was established in 1960 to protect the habitat of large herds of caribou, flocks of migratory birds and other species of wildlife.

"We know the surface resources are unique," said a statement issued by Andrus.

"They accommodate very special kinds of wildlife, habitat for millions of birds that migrate all over North and South America, and the nation's largest herd of caribou, whose survival is essential to Eskimos and Indians and their ancient culture."

Andrus said the U.S. Geological Survey, reviewing existing data, concluded that the wildlife range is not likely to contain a "super giant" petroleum field.

Andrus said that mineral development and transportation in that Arctic region could severely damage the tundra and wildlife and they might never recover.

"It would be a poor gamble to risk all that for uncertain short-term gains," Andrus declared.

The Geological Survey report said the geology of the wildlife range "permits the speculation that a number of (petroleum) fields could occur there, and available knowledge does not preclude the possibility that some of these might be very large".

The report offered "a rough estimate" that typical petroleum fields in the wildlife range might contain anywhere from 10 to 200 million barrels of oil and 0.1 to 5 trillion cubic feet of natural gas.

Such estimates translate into the equivalent of about one-half to eleven days' total U.S. oil consumption at present rates, and about one to 90 days' natural gas supply

May 23

For Vaughan, Victory at Last in Race to Nome

Twice before he had failed to finish but this year 72-year-old Norm Vaughan made it all the way to Nome, and he wasn't the last to cross the finish line of the 1,049-mile Iditarod Trail Sled Dog Race.

Vaughan, who had driven dogs for Rear Admiral Richard E. Byrd during his 1928-30 antarctic expedition, had no illusions about winning the race; just finishing it would be a victory.

Vaughan, assistant house manager for the Anchorage campus' Performing Arts Center, told an *Anchorage Times* reporter before this year's race: "I've driven dogs in Europe, Greenland, Canada, Alaska, Antarctica, Switzerland and many other places. I've raced dogs in the Olympics representing the United States and done other things with dogs in my life. But there is a challenge of going on the longest, toughest race in the world and I've just got to do it again."

Frostbitten feet forced him to abandon the race in 1975, and in 1976 he lost the trail and ran out of food for himself and his dogs. He was then, as he was this year, the oldest competitor in the Iditarod.

Vaughan crossed the finish line in Nome a week after the winner of the long, grueling race but three seconds ahead of the last-place finisher. There were cheers for him from hundreds of Nome residents, and the Dr. Schultz Bluegrass Band, which had given a benefit concert in Anchorage before the race to raise funds for Vaughan's participation, provided a musical welcome to the community at the end of the trail.

Game Biologist Says Fewer Calves Survive

FAIRBANKS (AP) — The state Department of Fish and Game says the over-winter survival rate of calves in the Western Arctic Caribou herd is down sharply this year.

Biologist Jim Davis said the average calf survival rate for the herd was 27 to 30 calves per 100 cows, compared with 51 calves to 100 cows last spring.

The world's largest animal, the blue whale, has the world's largest appetite — up to 8 tons of krill daily.

The Polar Times

No. 86 *JUNE 1978*

Eskimo Delegates Disappointed

June 30 (AP)

The International Whaling Commission voted Friday to allow Alaskan Eskimos to take two additional bowhead whales during the 1978 fall hunt.

The commission's action, reported by a spokesman for the U.S. National Marine and Fisheries Service, came after a survey by a team of scientists confirmed reports of an increase in the number of bowhead whales in the Bering Sea.

Up to 14 whales may be landed this year, under the new quota, but no more than 20 may be struck. The 1978 quota had been set at 12 landed or 18 struck, whichever occurs first.

Two whales were added to the 1978 quota to meet projected needs of the Eskimos, who depend heavily on the meat and blubber of bowhead whales for their subsistence.

The commission voted Thursday to allow the subsistence whalers in Alaska's nine traditional whaling villages a quota of 18 whales harvested or 27 struck, whichever comes first, for 1979. The vote was 9-to-1, with several of the 17 nations on the panel abstaining. A proposed quota of 24 was defeated earlier.

Eskimo delegates, who walked out of a London meeting of the commission Wednesday, arrived in Anchorage Friday subdued and bitterly disappointed at the bowhead whale quota set for next year's hunt.

"All the countries over there expressed sympathy with our position, but when it came down to voting, some countries that had other committments or had had problems with U. S. policies in the past voted in accordance with their historic positions for their own reasons." one of the delegates said.

The new quota represents a 50 percent increase over the original 1978 quota of 12 killed or 18 struck.

But the Eskimos, who walked out before the full commission vote, are not content with the 1979 quota. They say the quota is not sufficient to meet the cultural and nutritional needs of Arctic villagers.

And Mayor Eben Hopson of the sprawling North Slope Borough, headquartered at Barrow on the Beaufort Sea, says the panel ignored new data provided by the Alaska delegation.

"They wanted arbitrarily to set a quota without actually following the patterns of the scientific information that we provided them," he said.

A federal study this spring indicates the whale population is almost three times what was believed when the quota was set. The first quota, set at the request of the United States after an earlier decision to ban hunting of the endangered whale species, was based on an estimated bowhead population of about 1,000.

Federal researchers saw 1,700 whales at Barrow this spring, and say that indicates a total population of 2,264. The Eskimos estimate it is even higher.

But Hopson said Friday that the commission "completely ignored the numbers we provided them. They wanted to say just 24, 26, whatever."

"We are sworn not to comply with any quota that may fall below a 2 percent recruitment" or birth rate, Hopson said. The subsistence whalers sought a quota of 37 whales killed or 45 struck — more than double the commission limit.

Hopson added that he does not believe the U.S. government, which supported a 24-whale quota approved by the commission's technical committee, will enforce the quota.

"I don't think it's enforceable," he said. "We're going to go whaling next year. As a matter of fact, this coming September we're going to go whaling."

Whalers also threatened to violate the original quota, but did not do so. The villages took a total of 10 whales this spring, leaving two to be harvested this fall. However, Friday's action raised that limit to four.

U. S. Whaling Commissioner Richard A Frank said, "It is my hope that Eskimo nutritional needs can now be satisfied for the rest of this year. The commission has demonstrated its concerns for native peoples and subsistence requirements."

But members of the delegation who had asked Frank "to object to anything other than what we had asked for" said they "left dissatisfied not only with the IWC itself, but with our own (the U.S.) delegation's position because they had not objected at that point."

Asked about the 1979 quota, Harry Rietze, area director of the National Marine Fisheries Service, said in Juneau on Friday, "I hope it's something that we can work out. That is a 50 percent increase over this year."

He said another year of scientific data may strengthen the case of the whalers, adding, "I just hope things don't all fall apart." He noted the 17-nation commission moves cautiously "because of what's happened to whales around the world."

Eskimo whaling captains, seeking to retain autonomy in the issue, formed the Alaska Eskimo Whaling Commission earlier this year and federal officials agree they effectively policed the hunt. The panel also offered to help gather data to prove that their 4,000-year-old tradition would not further jeopardize the bowhead.

Diet, Attitude May Be Clues To Healthy Eskimo Hearts

ATLANTIC CITY, N.J. (AP) — Why don't Eskimos get heart disease?

Alaskan Eskimos eat a lot of fat, but a University of Idaho biologist explained here Thursday that their dietary fat is unsaturated rather than saturated.

Dr. J. Homer Ferugson has been studying the dietary fat intake and blood lipids of Eskimos and Caucasians in northern Alaska to explain why Eskimos have such a low incidence of heart disease. Lipids are a class of fatty substances that includes cholesterol.

The researcher said he found Caucasians living in the same area consumed far more of their fats as saturated fats.

Ferguson presented his study at a meeting here of the American Societies for Experimental Biology.

Scientists have assumed the amount of meat and animal fat in the diet is directly related to the incidence of heart disease. But the Eskimos, and the Masai tribe in Africa, eat a lot of meat without significant heart disease.

Analyzing blood samples from Eskimos and Caucasians in Alaska, Ferguson found similar cholesterol contents, but a significant difference in the amount of fatty acids.

He said that during the winter, Caucasians consume 20 percent more of their fats as saturated fats, but the Eskimos' ratio of saturated to unsaturated fats remains fairly constant year round.

Ferguson said Caucasians consume more saturated fats in the winter, which could explain why most heart attacks in western Europe and the United States occur during the winter months.

He also noted the Eskimos' response to stress could be a contributing factor.

Further research is needed to find out if the more placid attitude of Eskimos prevents the change in blood lipids which might be responsible for heart attacks among other races, he said. April 15

Whalers' Violation Is Forgiven

ANCHORAGE, May 8 (AP)—The Federal Government will not prosecute the Eskimos of Barrow for violating the quota on bowhead whales, the administrator of the National Oceanic and Atmospheric Administration said.

The Eskimo whalers follow a 2,000 year-old trodition in hunting the bowhtad for subsistence. But a dispute arose over the weekend when the Barrow group took its fourth whale and struck and lost a fifth. They were only allowed three bowheads under quotas set by the International Whaling Commission.

Richard Frank said in a ttlephone interview from Washington today thot prosecution would not be appropriate because the violation resulted from "an honest dispute."

The whalers contended that only two of the four whales were bowheads. Thty said the two others were similar to bowheads but of a different species. However, enforcement agents said that the whalers were only allowed to take bowheads because tht hunting of all other species of right wholes was banned.

The decision not to prosecute may have been influenced by the fact that it appeared unlikely today that Eskimo villages would take their full quota.

The International Whaling Commission stt a limit of 12 for all Alaska Eskimo hunters. A village-by-village breakdown wos done by the National Oceanic and Atmospheric Administration, and as long as the quota of 12 isn't exceeded "there's no embarrassment to the I.W.C.," Jim Brooks, chief of management for tht fisheries service, said.

As of today, only nine whales had been taken, and the ice pack in the Arctic Ocean has been melting, which means the whales no longer will be confined to open water near tht shore, diminishing the hunters' chances.

Trans-Alaska Pipeline Takes Highest Honors

The trans-Alaska pipeline project has been named the Outstanding Engineering Achievement of 1978 by the 75,000-member American Society of Civil Engineers.

The award is expected to be formally presented to Alyeska Pipeline Service Co. chairman E. L. Patton at a civil engineering conference in Anchorage in May, according to Dale Nelson, president of the Alaska Section of the American Society of Civil Engineers.

Nelson said the society's national president Bill Gibbs will be in Anchorage for the Cold Regions Engineering Specialty Conference, to be held May 17 to 19. The conference is expected to draw more than 300 persons, including engineers from Canada and Russia, Nelson said.

Patton is to be speaker at a conference dinner on May 17. Alyeska is builder and operator of the $8 billion pipeline system, the largest privately-financed engineering project in the world.

Announcement of the pipeline's award was made at the American Society of Civil Engineering's annual convention in Pittsburgh, Pa., which ended Friday.

Nelson said he received a telegram of congratulations from the ASCE Board of Direction. And the society's district director Gene McMaster of Seattle sent him a message, saying "We won!"

The Alaska pipeline project was in competition with 11 other projects for the award of outstanding engineering achievement, Nelson pointed out, including the Washington, D.C., transit system. Each of the society's 12 regions nominated one project for the award.

"This project doesn't seem to have any errors," he said. "It is constructed and working. We as Alaskans should be proud of it."

Nelson said he pushed for the award for the pipeline as a "pat on Alyeska's back for fine and outstanding work, following environmental guidelines."

In announcing the list of nominees for the engineering award, the national society described the pipeline as "possibly the largest, most difficult engineer and construction project ever undertaken by mankind."

"So impressive is the trans-Alaska pipeline that any of its elements alone might have been named an outstanding civil engineering achievement," the announcement said.

Other projects nominated for the award were Detroit's Renaissance Center; the reconstruction of Newark, N.J., International Airport; the Los Angeles Reservoir Project; the Washington, D.C. Metro Transit System; the New River Gorge bridge at Fayetteville, W. Va.; Dravo Company's lime facility at Maysville, Ky.

Also Denver's 21,000-seat floating stadium; Virginia's new Hampton Roads bridge-tunnel; Armco's Kansas City Works steel mill; the Honolulu Reef Runway, first to be built entirely offshore; and the Middle River No. 2 pumping plant, described as a "central feature in the San Francisco Bay Area's response to the recent two-year drought in Marin County." April 30

Soviets to Help Trace Pregnant Polar Bear

MOSCOW (UPI)—Soviet authorities promised yesterday to come to the aid of a pregnant and possibly homesick polar bear that roamed from Alaska into Soviet territory.

"We shall certainly help our American colleagues in searching for that courageous traveler," Soviet official Savva Uspensky told the newspaper Sotsialisticheskaya Industria.

The bear was one of two caught by officers of the U.S. Fish and Game Department in Alaska last June and collared with a radio transmitting device. Scientists used a satellite to pick up the signals and follow the bears through the Arctic.

The male managed to get rid of his collar but signals from the female indicated she is now about 150 miles from Wrangel Island, which is 450 miles northeast of the Bering Strait. U.S. scientists asked the Soviets to try to trace and help her if necessary.

Uspensky, director of the Central Laboratory for the Protection of Nature of the Soviet Ministry of Agriculture, said Soviet officials would give a warm reception to this transgressor of state borders."

"When we meet her, we'll examine her, replace the dying batteries in the radio transmitter and give the result of our observations to American scientists," he said.

Uspensky said that, expecting to give birth, the bear may have entered a den on an ice floe.

"Polar bears are pregnant for 230 to 250 days and to cover such a distance of 1,240 miles in such a state is a very difficult thing even for such a strong animal," he said. "Maybe she was born in our territory and crossed the borders of two countries and continents to give life to her children in the place of her own birth." Jan. 23

New Book Is History Of Alaska Engineering

Only a few of Alaska's historic engineers ever graduated from college, according to a new paperbound volume just published by Alaska's section of the American Society of Civil Engineers.

The 140-page volume, assembled from existing data by the chapter's historical committee, provides a concise look at building achievements through the years.

Although his name doesn't appear as author or editor, Amos J. Alter of Juneau is the man responsible for organizing materials and writing the book, according to committee member Leo M. Thompsen of Anchorage.

Alter retired last year as engineer of academic information and research in charge of the academic section of the state Department of Environmental Conservation. He had been with the state since the 1940s, when he was chief engineer of the Department of Health.

The book includes a chronology of the state's history and an inclusive listing of individuals and organizations who have made "contributions" to Alaska.

Tracing Alaska's history, the book details engineering feats of its inhabitants from prehistoric times to the present. The section on its "heritage in antiquity" includes sketches of such aboriginal shelters as the barabara, with attendant food storage pits located in permafrost.

The barabara, made of nothing but huge whale bones, blocks of earth from the tundra, animal skin, translucent intestine stretched to let in light, bits of driftood, sedge and other tundra plants, "protected the inhabitants" and "combined to make a home."

The domed stadium and geodesic dome are probably descendents of the simple practical barabara, Alter says.

Sample listings under "contributors and contributions" include the Kennecott Mines Co.'s delivery of the first trainload of copper in Cordova in 1911 and surveying of Cook Inlet and coastal areas by the U.S. Coast and Geodetic Survey in 1867.

The book also lists gold discoveries, building of early day canneries, explorations, building of lighthouses, airports, dams, important buildings and sewer systems and laying of various pipelines. April 27

Greenland is the world's biggest island. It is far to the north between North America and Europe. Its northernmost point is nearer the North Pole than any other known land.

The Polar Times

Published June and December by the AMERICAN POLAR SOCIETY, August Howard, Secretary, 98-20 62nd Drive (Apt. 7H), Rego Park, New York 11374

AUGUST HOWARD, Editor

THE POLAR TIMES highly recommends "The Polar Record," published by the Scott Polar Research Institute, Cambridge, England.

The American Polar Society was founded Nov. 29, 1934, to band together all persons interested in polar exploration. Membership dues are $2.00 a year or $5.00 for 3 years, which entitles members to receive THE POLAR TIMES twice a year.

Back issues, No. 1 through No. 77, if available are 50 cents each. Issue 78 and onward are $1.00.

The American Polar Society is classified as a tax exempt organization under Code Section 509 (a) (2).

Thomas Poulter, 81, Polar Explorer

By ELEANOR BLAU

The New York Times

June 17

Dr. Thomas C. Poulter, a scientist, inventor and polar explorer who was second in command of the second Byrd Antarctic Expedition, from 1933 to 1935, died of a heart attack Wednesday at Stanford Research International in Menlo Park, Calif., where he was a research consultant. He was 81 years old and lived in Los Altos Hills, Calif.

As second in command and chief scientist of the second expedition by Richard E. Byrd, Dr. Poulter led the party that rescued the admiral after he had spent part of a winter alone, an experience that Admiral Byrd wrote about in "Alone."

Dr. Poulter, writing of the rescue, recalled: "We were shocked at his appearance. Emaciated, hollow-cheeked, weak and haggard though he was, he met us casually, calmer by far than any of us."

Before setting out on the expedition, Dr. Poulter was a physics professor at Iowa Wesleyan College, where his prize student was James A. Van Allen, later the discoverer of radiation belts around the earth. Dr. Van Allen said in later years that Dr. Poulter had kindled the flame of his scientific curiosity.

For the third Byrd Antarctic expedition, Dr. Poulter designed the Snow Cruiser, a 33-ton giant of iron, steel, rubber and glass that, it was hoped, would be able to cross glacier chasms. It was to carry enough fuel to travel 5,000 miles and gasoline for its satellite airplane, as well as a year's provisions for a crew of four.

However, the vehicle, developed by the Research Foundation of the Armour Institute in Chicago, of which Dr. Poulter was science director, failed its mission when it was unable to get up from the bay ice to the continental ice shelf.

Dr. Poulter held more than 75 patents on diverse inventions and was credited with the development of, among other things, antisubmarine devices. His wide-ranging research included, in recent years, marine mammal sounds.

Raised in Mt. Pleasant, Iowa, Dr. Poulter received degrees from Iowa Wesleyan and the University of Chicago. At Iowa Wesleyan he headed the chemistry and then physics departments as well as the division of physical sciences, mathematics and astronomy.

Lab Named for Him

He became a director of the Armour Research Foundation in 1936, leaving in 1948 to become associate director of the Stanford Research Institute, now Stanford Research International. There he was a director for many years of the Poulter Laboratories, named after him for his contributions in the fields of detonation and shock pulse phenomena.

In 1960 he became general manager of physical and life sciences at the institute and established the institute's laboratory for the study of biological sonar and diving mammals, including studies with blind people.

Since his formal retirement from the institute a few years ago, he had been working with a surgeon there and at the University of California Medical School in San Francisco on experimental implants to aid the deaf.

Dr. Thomas C. Poulter

Dr. Poulter leaves his wife, the former Helen Gray; four sons and 14 grandchildren.

A colleague called Poulter "a Renaissance man of the sciences," who had explored for meteorities, designed an Antarctic snow cruiser and invented seismic methods for the discovery of oil.

Along the way, he had taught physics, chemistry and biology and become an expert in geology, meteorology, biophysics and many fields of engineering.

At the time of his death he was involved in yet another new field, applying engineering methodology and electronic implants in the reconstruction of the human ear to cure deafness.

A native of Salem, Iowa he did his undergraduate work at Wesley Academy (now college) and, within a few years, headed the chemistry, physics and biology departments there. He served as an enlisted man and then as a submarine officer in 1918-1919.

In 1932, he participated in a large expedition seeking meteorities and their fragments in the Southwest.

For his part in the Byrd expedition Dr. Poulter was awarded the first of two medals he received from Congress. He returned to the Antarctic with the Byrd 1939-40 expedition as scientific director.

After finishing the work for his doctorate at the University of Chicago, Dr. Poulter held posts that involved research and invention at Chicago and San Antonio. He worked with the Navy's research station at Point Barrow, Alaska, during World War II.

He joined Stanford Research Institute in 1948 and was its scientific director for many years. In 1963 he established SRI's Bio Sonar Lab at Fremont, a facility responsible for the first taping of communication between all known species of sea animals.

Dr. Poulter was a member of many scientific societies. In addition to two special Congressional medals, he held the gold medal of the National Geographic Society.

He is survived by his wife, Helen of Los Altos Hills, and by four sons, Thomas Jr. of Mountain View, Howard of Oakland, Glenn of Steamboat Springs, Colo., and Louis of Littleton, Colo. Fourteen grandchildren also survive.

MARIE PEARY KUHNE, 84, DAUGHTER OF EXPLORER

BRUNSWICK, Me., April 18—Marie Peary Kuhne, daughter of Rear Adm. Robert Peary, the North Pole explorer, has died at the age of 84.

Mrs. Kuhne became world famous as a child as Snowbaby, a name given her by Eskimos who had never seen a white baby.

Her mother, Josephine D. Peary, popularized the nickname in a children's book, "Snowbaby," written about the turn of the century.

Mrs. Kuhne, who was born in northwest Greenland in 1893, died Sunday, 10 days after the anniversary of her father's discovery of the North Pole in 1909.

The author of five books, she led a distinguished career as a lecturer and authority on Arctic history and affairs.

In 1932 she led an expedition that built a 60-foot monument to her father in Cape York, Greenland. In World War II, she was a member of the Danish-American Commission on Greenland and was decorated by the King of Denmark for her work in behalf of the Eskimos.

She was married to Edward Stafford, a Washington lawyer who died in 1955. In 1967 she married William W. Kuhne, a retired sea captain, who died last year.

Funeral services will be held tomorrow at Bowdoin College, where Mrs. Kuhne was once awarded an honorary master of arts degree.

She is survived by a son, a brother and several grandchildren.

AGENCY PLANS CURBS ON ESKIMOS' HUNTING

Federal Officials Say That Treaty Must Be Enforced — Threat to Food Source Is Seen

ANCHORAGE, Alaska, May 27 (AP)—The United States Fish and Wildlife Service, conceding that it is "stirring up a hornet's nest," has announced plans to deny special waterfowl-hunting privileges to Eskimos and Indians who have become "part of the cash economy."

Critics of the plan say it will affect virtually all Eskimos, and a sociologist who has studied hunting by Eskimos says it will, in effect, eliminate a food source for them. The service's action also comes at the end of the first year of a Government quota on whale-hunting by Eskimos.

The service's plan is being adopted to enforce an international treaty that dates from 1916. The privileges to be withdrawn include allowing out-of-season hunting of migratory birds if they are needed as a "subsistence food source."

The sociologist, Jack Peterson, says enforcement of the treaty will, in effect, eliminate the birds as a food source because nearly all Eskimo families belong to the cash economy to some degree, and because the birds are not in Alaska during the months when it is legal to hunt them.

A recent study by Mr. Peterson for the Federal Department of the Interior found that the whale quota and restrictions on hunting of caribou and walrus already were having a dramatic impact in villages.

Gordon Watson, area director of the Fish and Wildlife Service, who announced the plan Thursday, said his agency had long turned its back on out-of-season killing of migratory geese, swans and ducks when "there were legitimate subsistence needs for the food."

But the hunting violates a treaty with Canada and Mexico, Mr. Watson said. He added that some whites had contended that the Eskimos were receiving special treatment and had used that excuse to kill birds illegally.

Mr. Watson conceded that none of the species was in danger of extinction. But he said that without the treaty, Canada and each state could set its own regulations—a development that could endanger the birds.

As first written, the treaty was largely aimed at stopping a massive slaughter of birds for their plumage. In 1961, Federal agents in Alaska were ordered to enforce the treaty, but the reaction was fierce. "They literally tried to shoot our airplanes out of the sky," Mr. Watson said.

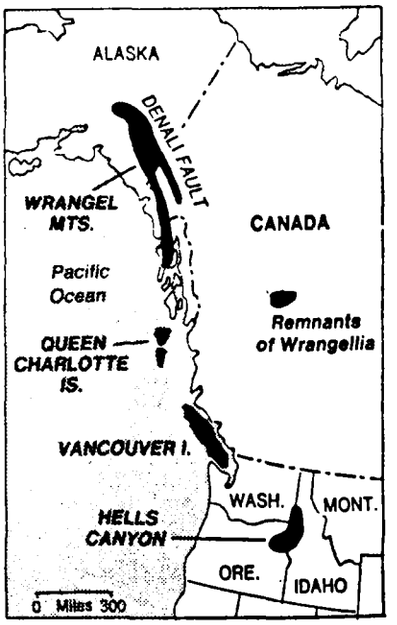
This time, too, Eskimos and their supporters are reacting strongly.

David Hickok of the University of Alaska said Eskimos had shown remarkable restraint at other restrictions on traditional food sources, but this "will blow the lid off in the villages."

Representative Don Young, Republican of Alaska, contended that the number of ducks taken in Alaska was minuscule compared with that in California, "where they have a 90-day season for six million hunters with a six-duck-a-day limit."

Byron Mallott, president of the Alaska Federation of Natives, said, "If they base this on who is involved in the cash economy, there will be very few who live exclusively on subsistence hunting" because some cash is needed to survive, even in rural Alaska.

Dale Stotts, secretary-treasurer of the Alaska Eskimo Whaling Commission, said, "An Eskimo doesn't lose his birthright just because he takes a job, especially just because of a bad international treaty."



For Wrangellia, Turn Left at Oregon

The theory of plate tectonics holds that over the last 200 million years at least, the face of the earth has been radically altered as the six or eight major and many minor plates of the surface have drifted about. India crashed into Asia, creating the Himalayas; Africa split from the Americas, but left Boston attached to New England. Some geologists believe that parts of Western North America are remains of a split-up continent that once occupied a space near Australia.

The North American fragment of the hypothetical continent of Pacifica has been named Wrangellia after the Wrangell Mountains of Alaska, an area that has puzzled geologists because its rocks are unlike those of its neighbors. Parts of Wrangellia are also found on Vancouver Island, the Queen Charlotte Islands off British Columbia, and perhaps in parts of Washington, Idaho and Oregon. Other remnants of Pacifica, the theory holds, are found on the coasts of Siberia and South America.

Last week, other geologists said they doubted that the similarities observed in various areas claimed for Pacifica are great enough to justify the conclusion that a single former continent could have accounted for them all. They hypothesize a number of former Pacific continental blocks, all swept from the ocean as the plates migrated and new ocean floor was formed.

At present, the Atlantic Ocean is expanding a few inches each year and the Pacific shrinking, as new ocean floor is formed in the mid-Atlantic rift valley and the Pacific floor is shoved under the coasts of Asia and South America. But only the last 200 million years of continental drift can be observed from study of the sea floor, because all the sea floor now existing was formed during that period. Many rocks in the continents are billions of years old, but whether they have all along been drifting about as they now do is unknown.

Frederick E. Crockett, a Member Of Adm. Byrd's Polar Expedition

BEVERLY FARMS, Mass. Jan. 18 (UPI)—Frederick E. Crockett, a member of Adm. Richard Byrd's first South Pole expedition, died Tuesday. He was 70 years old.

In 1928, Mr. Crockett interrupted his studies at Harvard University, from which he later graduated, to join Admiral Byrd's expedition for two years.

He received a special Gold Medal of Honor for his work and was one of three members of the expedition given a ticker tape parade in New York City.

He later prospected for gold throughout the Southwest and organized an expedition to the southern and western Pacific Ocean that explored the Galapagos Islands, Polynesia, Solomon Islands, New Britain and New Guinea.

For the last 24 years he was vice president of Hunneman & Co., in charge of its Hamilton office.

Survivors include his widow, Patricia; two daughters, a sister and a brother.

Hunting of Gray Whale Could Be Revived

WASHINGTON, June 18 (AP)—The Federal Government believes that it may be possible to revive hunting of the California gray whale, once on the brink of extinction.

"Grounds exist for optimism that the gray whale may be removed from the protected list," Richard Frank, administrator of the National Oceanic and Atmospheric Administration, said today.

But any effort to hunt the whales is likely to meet stiff opposition from environmentalists. "There would be an enormous public outcry if the Commerce Department moved to lift the whale's protection," said Craig Van Note of Monitor, a consortium of conservation groups.

Mr. Frank cited new studies that show that the population of the whales "is now approaching its mid-1800's level of approximately 15,000 animals."

ENERGY SOURCE FOR THE AURORA

Rather large amounts of power are required to produce the aurora seen in the two polar regions. During a moderate to large auroral display lasting one to three hours the energy dissipated by the auroral processes is about the same as released in a Richter magnitude six earthquake, in a cyclone, or in a small nuclear bomb.

It is almost certain that the energy required to power the aurora comes from the sun. From the sun there is a continual outflow of matter in the form of electrons and nuclei of atoms, mostly hydrogen nuclei (protons). This flow, called the solar wind, streams at speeds near 400 km/sec (900,000 mph) and therefore takes several days to reach the earth, whereas light takes only eight minutes.

Near the earth, the energy of motion within the solar wind is converted to electromagnetic energy—by the same process that an electrical generator uses to convert energy of motion to electrical energy. That energy is again converted to energy of motion of those electrons and protons that stream down into the atmosphere to collide with the air to cause the aurora we see.

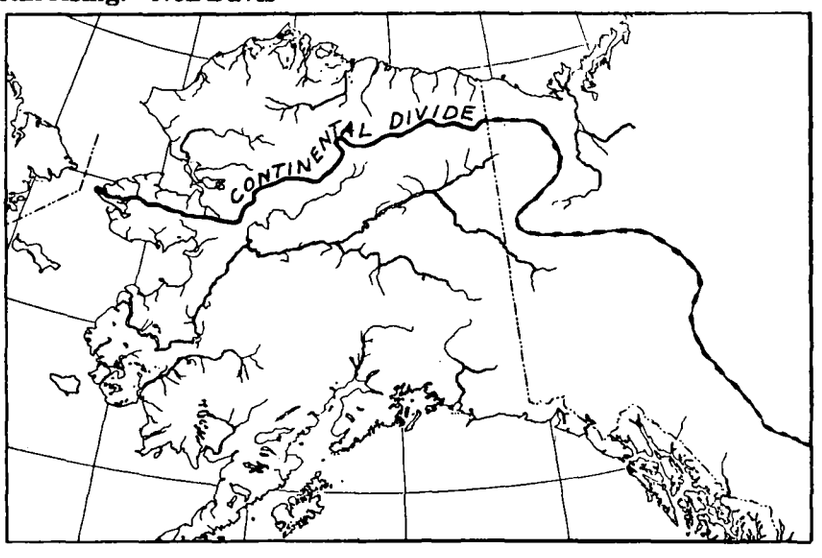
The details of energy conversion and energy transfer processes are very complex and not yet entirely understood. If we can understand the details, the knowledge should give valuable insight into cosmological processes, since we suspect the processes in the aurora are those that also occur in stellar bodies and perhaps elsewhere in the universe.—Dan Swift.

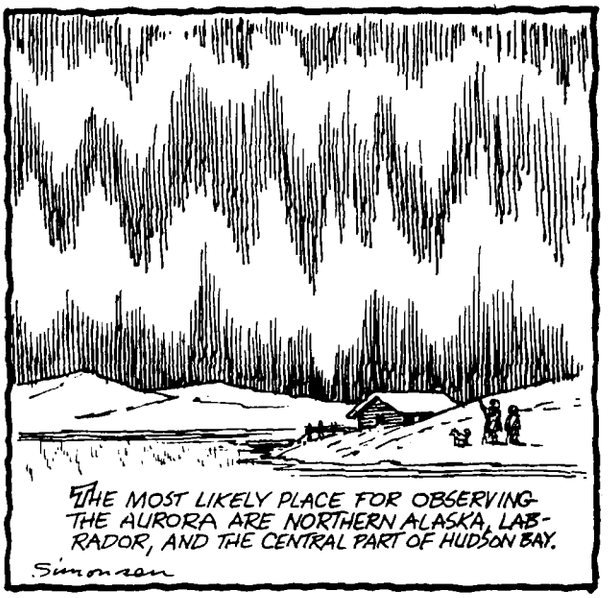
Continental divide

The continental divide trends roughly north-south through the United States along the backbone of the Rocky Mountains. It divides the country into watersheds emptying westward into the Pacific Ocean or eastward into the Atlantic Ocean or the Gulf of Mexico.

One would think the extension of the continental divide into Alaska would bring it along the lofty Alaska Range and across Mt. McKinley. Instead, as the map shows, the continental divide through Alaska runs along the Brooks Range and into Seward Peninsula where it terminates at Cape Price of Wales. It separates the watersheds draining north and west into the Arctic Ocean from those draining west and south into Bering Sea.

The curious track of the continental divide from the Rockies into the Brooks Range led geologists until recently to assume erroneously that the Brooks Range was a structural extension of the Rocky Mountains. But within recent years geologists have determined the Brooks Range was uplifted about 100-200 million years ago, sometime earlier than the uplift of the Rockies, 65 million years ago. So now, most geologists think the Brooks Range is not structurally related to the Rocky Mountains. Nor is the Alaska Range. It has been formed very recently, within the last 5 million years, and is still rising.—Neil Davis





QUESTION: *What causes the Northern Lights?*

* * *

ANSWER: The Northern Lights is a strange and colorful occurrence that astronomers call the "aurora borealis." The aurora, visible only a night, is a bright light that appears in various colors at irregular times. The most likely places for observing the aurora are northern Alaska, Labrador, and the central part of Hudson Bay.

The aurora is caused by electrically charged particles that are given off by the sun. These particles bombard the earth's upper atmosphere. When this happens, the aurora displays itself in any of a number of shapes and colors of the spectrum. The aurora appears as low as 70 miles above the earth's surface and can extend from east to west for several thousand miles.

The aurora caught the attention of scientists as far back as the 4th century B.C. Serious scientific investigation began in many nations during the 18th century, including some by Benjamin Franklin. During this time, a great deal of scientific information about the aurora was gathered.

Modern investigation began about the turn of the century with an experiment conducted by a Norwegian named Kristian Birkeland. He succeeded in artificially producing a small scale aurora in his laboratory by firing ions (electrically charged particles) at a magnetized model of the earth which he covered with phosphorous The firing of the ions produced a glow on the model earth in the same regions the aurora appears on earth.

Daily News-Miner, Fairbanks, Alaska

Soviet Nuclear Icebreaker Opens a New Arctic Route

By THEODORE SHABAD

A Soviet nuclear icebreaker, in what may be a significant advance in Arctic ice navigation, has convoyed a cargo ship across the frozen top of the world two months ahead of the regular start of the brief summer shipping season and far to the north of the customary sea lane along the Siberian coast.

Like a similar pioneering voyage to the North Pole last year, the latest experiment is designed to demonstrate the Russians' growing capability to use the Arctic basin as a transport route linking the western and eastern ends of the Soviet Union and supplying new oil and gas fields and other resource-development sites along the way.

According to Soviet press reports, it took 18 days for the 75,000-horsepower icebreaker Sibir, with the loaded freighter Kapitan Myshevsky close behind, to cover the 3,360 nautical miles, 2,800 of them through heavy pack ice, from the port of Murmansk in northern Russia east to the Bering Strait, which separates Siberia from Alaska.

The expedition had the benefit of three types of Soviet earth satellites. The Cosmos 1000, a navigation satellite launched in March, helped determine the ships' position. An ice-reconnaissance craft of the Meteor series supplied information on ice cover. And a communications satellite relayed television programs from Moscow.

Shipping Season Being Extended

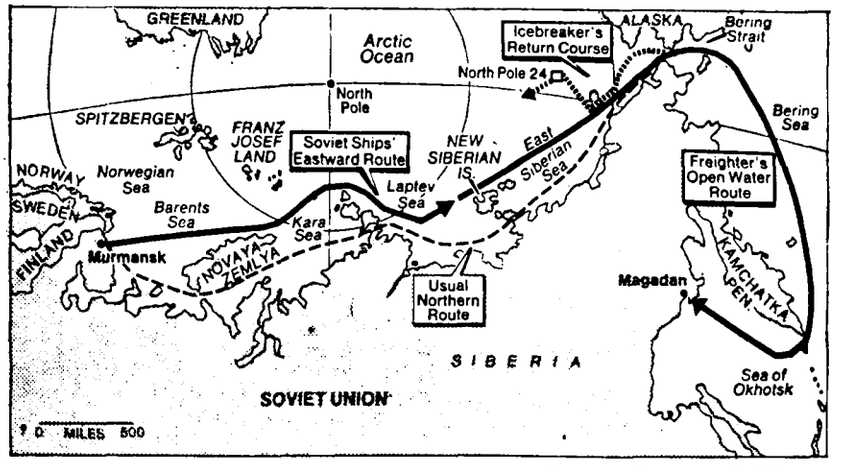
Although the Northern Sea Route, as the usual shipping lane along the Siberian coast is called, has long been publicized by Moscow as a potential transport route serving Arctic outposts, inadequate icebreaker capacity has limited its practical use in the past to about three months, starting in July-August.

In recent years, the Russians have reinforced their fleet with three nuclear-powered icebreakers—the older 16,000-ton Lenin and the newer and more powerful 25,000-ton Sibir and Arktika—as well as conventional shallow-draft icebreakers built in Finland that are especially designed to open up shallow ice-clogged river mouths.

As a result, northern shipping operations have been steadily extended to as long as eight and nine months in the heavily traveled western sector of the Northern Sea Route. The present voyage is an attempt to test the practicality of a prolonged shipping season along the entire route.

Trip Home Even Farther North

The two ships left Murmansk on May 25 and, after having fought their way through the Arctic ice, reached open water off the northeast tip of Siberia on June 12. While the freighter proceeded on her own through the Bering Strait to deliver a cargo of 6,000 tons of construction equipment to the Far Eastern port of Magadan last Thursday, the icebreaker began her homeward journey, attempting an even more northerly route through the Arctic Ocean than on the eastward leg.



The New York Times/June 27, 1978

In an effort to avoid the ice-clogged straits between the Siberian mainland and several offshore island groups, the Sibir and the Kapitan Myshevsky followed a course that took them to the north of the islands, known as Novaya Zemlya (New Land), Severnaya Zemlya (North Land) and the New Siberian Islands. At the northernmost point along the route, on June 3, the two ships rounded Arctic Cape, the northernmost point of Severnaya Zemlya, at 81 degrees 20 minutes north latitude.

At one point during the trip, in the East Siberian Sea, huge ice floes tilted the icebreaker by 20 degrees from the vertical, causing water to spill out of the ship's indoor swimming pool and knocking loose objects off tables and shelves, press reports said. Underwater inspection of the hull revealed dents, but no serious damage.

On the homeward voyage, on June 20, the Sibir delivered construction equipment and supplies as well as a team of scientists to a new drifting ice-floe station, designated North Pole 24, which was established two months ago in the East Siberian Sea. It is the third manned research station now adrift in the Arctic basin.

The Soviet Arctic May Yet Become a New Mediterranean

As a transport route, the Arctic Ocean seems distinctly unpromising; heavy pack ice covers 90 percent of it in winter and 70 percent of it of it all year round. Henry Hudson and many others died searching fruitlessly for a passage through it. Nevertheless, the American explorer Vilhjalmur Stefansson once predicted that the Arctic was destined to become a "new Mediterranean," and now it looks as if the Soviet Union may be able to make the prophecy come true.

Last week the nuclear-powered Soviet icebreaker Sibir, heading much farther north than usual to avoid ice-choked coastal straits, cut a path through frozen seas for a cargo ship and convoyed it 3,360 nautical miles from Murmansk, near the western end of the Soviet Union, to the Bering Strait off the northeast tip of Siberia. From there the cargo ship continued alone through open water to the Far Eastern port of Magadan.

The trip, made two months before the normal opening of the short summer shipping season, was designed to test the feasibility of keeping ship lanes open for most of the year on the entire Northern Sea Route along the Siberian coast. With their fleet of three nuclear icebreakers, the Russians have already extended the shipping season to eight or nine months at the western end of the route.

The Sibir's trip was not easy. It took 18 days, and in the East Siberian Sea, ice floes caused the 75,000-horsepower vessel to list so severely that books, vases and other objects fell off shelves and water spilled from the ship's swimming pool. The expedition's success was due partly to information relayed to the Sibir by the Cosmos 1000, a navigation satellite, and by an ice-reconnaissance satellite in the Meteor series.

Ice navigation is important to the Soviet Union to give the country easy access to its rich Arctic resources and to keep its industrial outposts supplied with construction materials and other necessities.

Oslo Curbs Barents Sea Fishing

OSLO, April 28 (Reuters)—Norway announced yesterday a ban on trawler fishing in some parts of the Barents Sea as a conservation measure. The Government said that all fishing, except for shrimps, would be banned from May 15 in a 20-nautical-mile zone around Bear Island and that a similar ban would apply in two zones 15 and 20 miles off the west coast of Svalbard.

Scientists Spend 40 Years in the Cold

Russian Teams Study Opening of Routes in Arctic Wasteland

MOSCOW (UPI)—The year was 1937 and the scene probably looked very much the same as it looks today.

For as far as the eye could see, there was nothing but icy wasteland. But it was a home for a group of Soviet pioneers, front-runners in the battle to open the shipping lanes of the Arctic.

Soviet scientists have been living on floating ice stations in the Arctic for the last 40 years, monitoring the currents, fighting the elements and keeping an eye on weather and ice movements.

Some have accused them of keeping an eye on more strategic matters.

The Soviet Union has led the way in exploring the Arctic regions, and now sees them as acceptable transportation routes between the natural resources of Northern Siberia and Western production centers.

It has been a hard, demanding life threatened by bitter cold, raging storms and the unforgiving loneliness of the Arctic night.

"Our life has been a monotonous affair, day in and day out keeping an eye on the weather and the drift, on the currents of air and water mass," one Soviet researcher said.

They live in prefabricated buildings insulated with foam panels against temperatures that drop to minus 50 degrees Fahrenheit. Their supplies and equipment are flown in during good weather.

But the rewards have been great for the Soviet Union.

The official press agency Tass reports that polar explorers on the drifting ice station "North Pole 22" have spent a record four years floating through the waters of the central Arctic.

During the period, the ice station floated in a wide arc across "little explored polar areas of relative inaccessibility," according to Tass, covering 800 miles.

Exploration is a romantic subject in the Soviet Union, and the news organizations devote almost as much attention to the Arctic effort as to space and other types of research.

But there's more involved than the glamor of discovery.

Northern Siberia is wealthy in deposits of oil and minerals, but the logistics of moving them from the northeast to the production centers of the European Soviet Union have been frustrating.

For nine months of the year, the northern sea lanes are clogged by ice, forcing ships to travel about 13,000 miles in a southern route. The northern route is less than half that distance.

The development of the floating ice stations, along with the use of huge icebreakers and aerial surveys, is aimed at extending the amount of time the northern shipping channels can be used.

The ice stations also have a military and strategic benefit, although there is little information on this role available through official Soviet channels.

The main purpose, it appears from a reading of Tass releases and other articles about the stations, is to develop the sea lanes. Soviet icebreakers also are playing a major role.

In August, the nuclear-powered icebreaker Arktika became the first such vessel to reach the North Pole.

Soviet marine authorities proclaimed the event as one of the most important steps in opening the northern sea routes, and predicted that some day huge tankers and freighters, aided by icebreakers of the Arktika class, will bring millions of tons of oil and minerals to the West.

The floating ice stations will play a key role in that future.

They have been making extensive maps of the ocean floor and conducting wide weather and ice experiments.

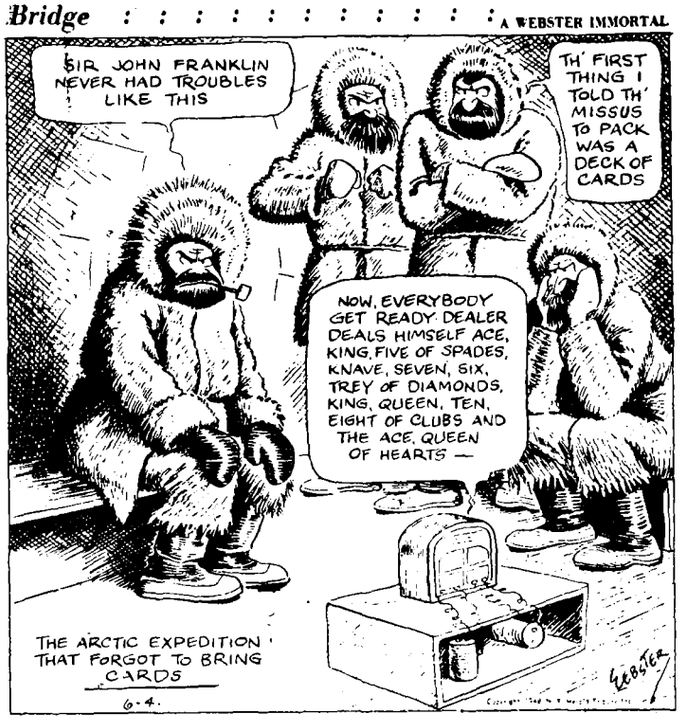
The ice stations maintain constant radio contact with Moscow and Leningrad during the harsh winter months, and the crews are relieved regularly.

The "North Pole 22" station alone has had about 150 researchers on board during its journey, and has been the site for the experiments of more than 1,000 scientists who made individual expeditions.

Baby It's Cold Outside

In December, 1978 Norway will establish a manned weather station at the Norwegian Bouvet Island in the Southern Atlantic. A team of scientists will be stationed on this barren, volcanic island in order to record meteorological observations during January and February, 1979.

This expedition is but a very small part of a world-wide 1/2-billion dollar meteorological observation project, involving 10,000 onshore and 7,000 ocean-born weather stations, 800 radio transmitters, 300 ocean buoys and approximately 50 ships.



UW To Assess Arctic Drilling

WASHINGTON — (UPI) — The University of Washington has been awarded more than half a million dollars for ecological research on the impact of oil exploration on Alaska's continental shelf, the Commerce Department announced yesterday.

The grant, made by the National Oceanic and Atmospheric Administration, also will be used to continue studies on Arctic Ocean shore ice behavior, currents, and small marine life in the gulf of Alaska.

University scientists will use $56,807 to study ice floe behavior on the continental shelf of the Beaufort and Chukchi Seas, where ice floes have traveled as much as 62 miles a day, the report said.

Other scientists will use $150,000 to study microscopic fish and shellfish inhabiting the lower Cook Inlet in the Gulf of Alaska.

The University's Department of Oceanography received $304,600 to study ocean currents in Bristol Bay east of the Pribilof Islands and gather current meter records in the Norton Sound-Chukchi Sea region, including the Bering Strait, the report said.

To date, the Commerce Department has awarded $3,095 to the University of Washington for these arctic research projects, the announcement said.

Icebreaker Fuji Returns To Tokyo

The icebreaker Fuji returned to Tokyo's Harumi Pier Thursday morning after transporting Japan's 19th Antarctic wintering team and supplies to the Japanese Showa Base on Ongul Island.

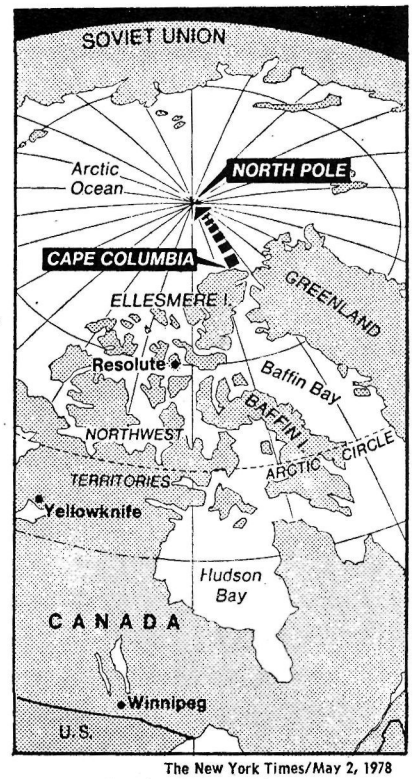
The ship had left Tokyo last November.

Returning aboard the ship were 10 members of the summer observation team.

April 21

Lone Sledder Reaches North Pole; 54-Day Trek Is First of Its Kind

Associated Press



The New York Times/May 2, 1978

Naomi Uemura after starting his trip; the map indicates his route

By JOHN NOBLE WILFORD

A Japanese explorer has become the first person to reach the North Pole alone by dog sled after having struggled across 600 miles of frozen Arctic Ocean and survived attacks by a marauding polar bear.

The explorer, Naomi Uemura, 37 years old, reached his destination on Sunday, it was announced yesterday in Washington by the National Geographic Society, one of the sponsors of the expedition. The trek, which started at Cape Columbia on Ellesmere Island in Canada's Northwest Territories, took 54 days.

Through much of Sunday the lone explorer took repeated sextant sightings until he was sure that he had reached the top of the world. Then he pitched camp and radioed the news of his accomplishment.

Early yesterday morning, an aircraft out of Resolute, in the Canadian Arctic, landed at Mr. Uemura's camp and its more precise navigation instruments confirmed that the explorer had indeed reached the North Pole, a National Geographic spokesman said.

Others have made it to the North Pole, but never alone. Comdr. Robert E. Peary is generally credited with the discovery of the North Pole, which he reached, with Matthew Henson and four Eskimos, on April 6, 1909. Some historians support a prior claim by Dr. Frederick A. Cook, a Brooklyn physician, who maintained that he and a party of Eskimos reached the pole on April 21, 1908.

Although he made the solo trek by dog sled, Mr. Uemura had the benefit of technologies unavailable to the Pearys and the Cooks—a radio, satellite tracking, and airdrops of dog food.

New Tent Was Airdropped to Uemura

Three days after he began his journey on March 6, a polar bear tore into the tent where Mr. Uemura was sleeping, destroyed it and ate most of the supply of dog food. When the bear returned the next morning, Mr. Uemura was awakened by the dogs' barking. He shot and killed the bear at 75 yards. The dogs then feasted on the carcass, and a new tent and more dog food were airdropped to Mr. Uemura.

Throughout his polar trek, Mr. Uemura's progress—or, on some stormy days, lack of it—was tracked by the Nimbus 6 meteorological satellite, which passes over the pole every 108 minutes. Signals from a radio transmitter mounted on the sled were received by the satellite and relayed to the Goddard Space Flight Center at Greenbelt, Md., where Mr. Uemura's position could be pinpointed several times a day.

Plans for Onward Journey Changed

Mr. Uemura had planned to return across the Arctic Ocean to Greenland and then proceed south through the 1,680-mile-long island. However, because of an early breakup of Arctic pack ice, he will be airlifted to the northern tip of Greenland before he continues his journey.

Among his previous exploits are a 7,500-mile dog-sled journey from Greenland to Alaska and the solo conquest of the highest peaks on four continents: Kilimanjaro in Africa, Aconcagua in South America, Mount Blanc in Europe and Mount McKinley in North America.

In Greenland, Mr. Uemura will be searching for evidence of ancient habitations. He will continue to take systematic snow, ice and air samples for Japan's National Institute for Polar Research and the Water Research Institute of Nagoya University. His principal sponsors, besides the National Geographic Society, are Japan's Mainichi newspaper and television network and the Japanese magazine Bungei Shunju.

Gambell Gets Its Bowhead

GAMBELL (AP) — Villagers here are celebrating the taking of a bowhead whale, the second harvested off St. Lawrence Island in the Bering Sea since the animals began their annual northerly spring migration.

Both Gambell and Savoonga now have fulfilled the one-whale quota set for the villages by the International Whaling Commission.

Savoonga crews brought in a 40-foot whale on April 16. Meat from that whale, the first taken by Eskimo whalers this season, was shared with Gambell under a traditional arrangement between the two island communities.

The captain of the victorious Gambell whaling crew, Vernon Slwooko, says the Gambell whale was struck at about 5 p.m. Friday. The 47-foot sea mammal was beached about seven hours later near the village.

A quota of 12 whales harvested or 18 struck was set for Alaska whaling villages by the commission late last year. It is the first limitation on subsistence harvest of the animals that traditionally provide a large percentage of the protein for some Arctic villages.

So far, no other whaling villages have reported a strike as the whales continue their migration through the Bering Straits to the Arctic Ocean.

That migration and many other of the whales' habits have been little explored. Members of the Alaska Eskimo Whaling Commission, formed to fight the quota, plan to work with scientists to learn more about the animal and to determine the bowhead population.

The quota was set because some scientists fear the bowhead population, much depleted by commercial whaling, is dangerously low. Many Eskimo whalers disagree. April 25

Japan Arctic Expedition Stands On Top Of World

Hecla Point, Ellesmere, Canada (By Yomiuri Correspondent Shigeyuki Okajima)—Japanese stood on "top of the world" for the first time in history when a five-man party of the Nihon University Arctic expedition reached the North Pole at 7 pm Thursday JST (10 am Thursday GMT). APRIL 29

The feat was accomplished by the party composed of three Japanese—Tadashi Tawada, 33, deputy leader of the expedition and an instructor of the Maritime Self-Defense Force, Ikuo Oshima, 30, and Susumu Nakamura, 32, a cameraman —and two Eskimos.

After traversing a distance of 782 kilometers as the crow flies from the base camp at Hecla Point on dogsleds, the five-man party planted the Japanese national flag at the North Pole.

According to reports, the temperature at the North Pole was 15 degrees below zero centigrade and a blizzard was raging. The condition of the ice was relatively good, however.

Two chartered planes which were standing by at Hecla Point left for the North Pole via Alert, Ellesmere Island, early Friday JST.

The Nihon University expedition left Japan on February 3, sponsored by the Education Ministry, The Yomiuri Shimbun and the Nippon Television Network Corporation.

The expedition was composed of members of the Nihon University Alpine Club and members of the Sakuramon Alpine Club, an organization of graduates.

After joining a party of 11 Greenland Eskimos, the expedition built its base camp at Hecla Point at 82 degrees 53 minutes north latitude and 64 degrees 43 minutes west longitude. The temperature at the time was 49 degrees below zero.

Nearly Abandoned

A total of 117 Eskimo dogs died during an airlift in early March and the expedition was nearly abandoned.

Kaneshige Ikeda, 39, leader of the expedition, decided to go ahead when he received assurances of cooperation from the Eskimos.

A total of 22 men, including 11 Eskimos and newsmen, left the base camp March 12.

Tawada and the two other Japanese as well as the two Eskimos who made up the attack team separate from the others at the 250-kilometer point April 6. They headed for the North Pole with three dogsleds.

They passed the 85th parallel on April 4 and the midpoint between the base camp and the North Pole on April 14.

On April 17, one of the Eskimos was replaced.

When they were passing the 89th parallel, they were often harassed by openings in the ice and by fog, but they pressed on.

After leaving a point which was 89 degrees 17 minutes north latitude, 977 kilometers from the North Pole, they traveled around the clock to reach their destination.

'All Doing Well'

The reports said Tawada, a Nihon University graduate and leader of the assault team, radioed the base camp that all five men were in good health.

The Nihon University party was the fifth team in history to reach the North Pole.

In 1909, Robert E. Peary, a US Arctic explorer, was the first man to reach the North Pole.

Another Japanese, Naomi Uemura, 37, is making a solo attempt to reach the North Pole, but it is not yet known whether he had reached a point 90 degrees north latitude.

Tawada has participated in expeditions sent to Greenland by Nihon University on two previous occasions.

Oshima went to Greenland in 1972 to prepare for the North Pole venture and settled in an Eskimo village, where he married an Eskimo woman.

Nakamura, also a Nihon University graduate, participated in expeditions sent in the past to Greenland and Mt Everest.

The two Eskimos who accompanied the three Japanese were Peter Peary, 39, a grandson of the American Arctic explorer, and Ilanguak Kristiansen, 26.

Nihon University Professor Kiyoshi Seita, 69, who is overall leader of the expedition, said that reaching the North Pole had been a dream since 1968 when a Nihon University team succeeded in crossing Greenland.

Riches of the Sea

Much attention has been devoted in recent years towards investigating food supplies from the oceans, and among the most promising is *krill*, a crayfish about one inch long, which is found in enormous quantities in several areas. Norwegian marine scientists have just stated that very substantial amounts of krill may be fished in fjords in the northernmost part of Norway, from Lofoten to Porsangerfjorden. In one of these fjords it may be possible to catch as much as 2.5 tons per hour.

Krill is today fished extensively in the Barents Sea by the Soviets, who consider it as an important source of food. They make a pate from it of very high nutritional value.

In order to exploit these reserves in a rational manner, however, special trawls will have to be designed together with new high-frequency detector equipment, as krill cannot be detected by the traditional echo-sounding methods.

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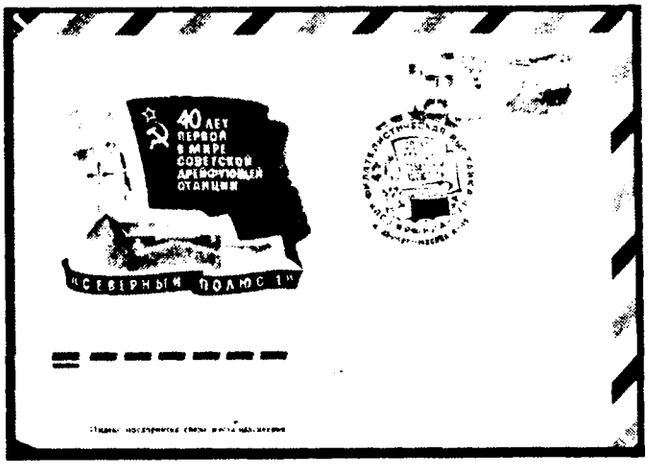
The Norwegian Polar Institute is celebrating its 50th anniversary.



This envelope is postmarked with the inscription "40th Anniversary of the North Pole I Station" from "Poliarofila 77" held in Moscow in May of 1977.

13 Nations Support a Curb On Krill Fishing in Antarctica

By WALTER SULLIVAN

A tentative agreement to protect a major oceanic resource before there has been any large-scale exploitation has been drafted at a 13-nation conference in Canberra, Australia. The convention could become a landmark in international law.

The convention would create a "commission on the conservation of Antarctic marine living resources" whose chief task would be to control the anticipated mass harvesting of krill. The potential importance of the krill, a tiny, shrimp-like crustacean that abounds in Antarctic waters, is that it is expected eventually to provide a major portion of the world's protein harvest from the seas.

If, as proposed, the convention assumes its final form by the end of this year it would set the stage for tackling the far more controversial issue of Antarctica's mineral resources, including suspected offshore oil.

This could raise the emotional question of territorial claims. For two decades the rival claims of seven nations to slices of the Antarctic continent have been kept in abeyance while the continent remained demilitarized and open to scientific research by all.

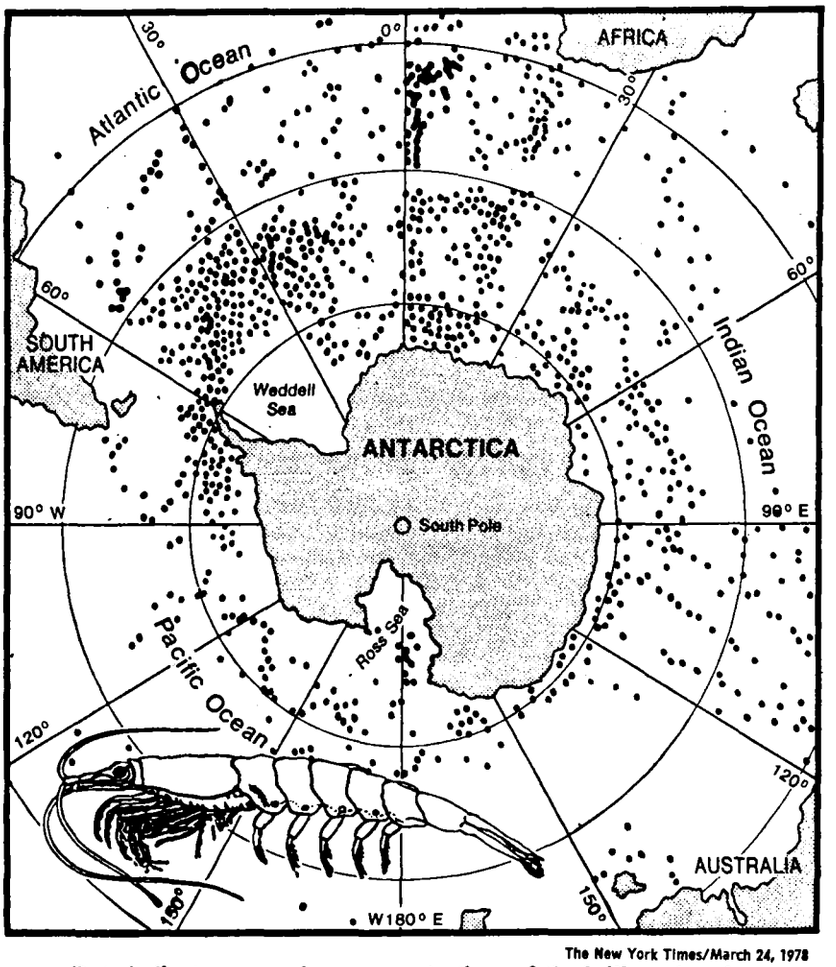
Such status was embodied in the 12-nation Antarctic Treaty of 1959 within whose framework the Canberra meeting was held from Feb. 27 to March 16. Poland, by starting an Antarctic research effort, has joined the treaty nations with "consultative status," bringing the total to 13.

The original 12 included the seven claiming slices — Argentina, Australia, Britain, Chile, France, New Zealand and Norway—plus those conducting research there—Belgium, Japan, South Africa, the Soviet Union and the United States. The claims of Argentina, Chile and Britain overlap.

The claims are based on proximity, as in the case of Argentina, Chile, New Zealand and Australia, and on exploration by early explorers.

The recent Canberra conference was called pursuant to the ninth consultative meeting held, as provided in the Antarctic Treaty, in London last September and October.

The London meeting called for the drafting of a convention on marine resources by the end of this year. It also recommended that the treaty nations "urge their nationals and other states to refrain from all exploration and exploitation of Antarctic mineral resources while making progress toward the timely adoption of an agreed regime concerning Antarctic mineral resource activities."



The New York Times/March 24, 1978

Dots indicate areas where concentrations of the krill are heaviest

'79 Meeting in Washington

The United States, as host government to the 10th consultative meeting, scheduled for September 1979 in Washington, is to convene a meeting "to consider legal and political aspects of mineral resource issues" and report to the 10th consultative meeting.

Washington, however, wants to reach agreement on the living resources convention before raising further complications. Meanwhile the Soviet Union and Australia reportedly would prefer a full moratorium on mineral exploitation, a step that would not be opposed by the United States, according to Washington reports.

When the meeting opened in Canberra last month, eight draft conventions plus several working papers were tabled by the delegations. After considerable discussion, the conference chairman, J. R. Rowland of Australia, undertook to combine these into a single draft conforming as closely as possible to the consensus of the meeting.

This draft has not yet been made public but has been circulated to the governments in anticipation of a follow-up meeting in Buenos Aires in July. The draft provides for a commission, representing all adherents to the convention, that could set annual catch quotas.

Assessment of Harvesting

Inspectors would observe compliance much in the manner of inspection provisions in the Antarctic Treaty. An independent council of experts would assess the effects of harvesting, keeping in mind the total ecosystem of Antarctic waters, which leans heavily on the krill population.

Krill provide the chief sustenance for a wide range of creatures from the giant blue whales to penguins, seals, fish and squid. The study done for the State Department by Tetra Tech Inc. of Pasadena, Calif., and published in February listed crab-eater seals as the chief predators, eating some 300 million tons of krill a year.

Estimates of the total krill population range from 183 to 1,350 million tons.

Several difficult issues remain unresolved with regard to the convention. One is the nationality of the inspectors. The fishing nations prefer that the inspector and inspected be of the same nationality. A suggested compromise would be for nations to agree bilaterally to exchange inspectors.

Another is the allocation of costs for maintaining a secretariat for the inspections and for the scientific monitoring. The United States argues that the United Nations formula for pro rating costs, which puts the primary burden on the United States is inappropriate. The fishing nations likewise do not wish to carry the entire burden.

Voting Procedures Undecided

Voting procedures have also not been agreed upon. The fishing nations reportedly would prefer unanimity on all issues.

An alternate scheme would require unanimity for the annual growth catch and a two-thirds majority for all other decisions.

Japan and the Soviet Union have long been active in krill harvesting, having begun on a small scale in the early 1960's. In the last two years a number of other nations have joined the effort, although still on a moderate scale. The active treaty nations in addition to Japan and the Soviet Union have been Chile, Norway and Poland. Nontreaty participants included East and West Germany, Korea and Taiwan.

In the Southern summer of 1975-76 the West German catch rate averaged from six to 12 tons an hour with a maximum of 35 tons netted by one ship in eight minutes. The Russians are processing krill into "shrimp butter" (50 to 80 percent krill paste with 15 to 25 percent butter), a snack spread (15 to 20 percent mussels with 64 to 75 percent krill paste) and sausages.

An alterate use is in animal feed, but the Tetra Tech study concludes that human consumption will prove the most important applications.

Treaty Group Criticized

There has been criticism of the initiative of the treaty countries in seeking to create the machinery for controlling Antarctic resources. In the current issue of the Yale Law Review a third-year law student, Edward Honnold, refers to the treaty group as a "self-selecting society." Resolution of the problem to carry weight under international law, he argues, should be by a world body such as the United Nations.

The treaty countries are anxious to avoid this in view of the stalemated talks on a similar problem—the exploitation of deep sea resources. However, the resolutions of the ninth consultative meeting last fall said that the action taken on mineral resources "should not prejudice the interests of all mankind in Antarctica."

The proposed convention on living resources—and presumably the one to follow on raw materials—would be open to all participants in such exploitation. As with deep sea mining and oil extraction, exploitation of Antarctic resources for a long time to come will lie within reach only of countries with high technology.

The proposed convention would allow for participation by such international bodies as the Food and Agricultural Organization of the United Nations, which is seeking to improve the protein diet of less-developed countries. Not covered by the agreement would be whales and seals, which come under other conventions. That on Antarctic seals came into force on March 11.

The United States delegation at Canberra was led by Robert C. Brewster, Deputy Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs. It included specialists from concerned private groups such as the Sierra Club and from Congress.

From the source of the Yukon River at the junction of Lewes and Pelly Rivers, Yukon, to its outflow into the Bering Sea in Alaska, the river is 1,770 miles long.

Scientist to Study Mammoth Sample For Clues to Life

By WALTER SULLIVAN

A tiny specimen of frozen mammoth flesh, flown here yesterday from Moscow, will be tested to determine whether its proteins and nucleic acids are intact.

If they are, it should be possible to mass-produce the nucleic acids and test them against those that define the structure and function of modern elephants. That the surviving genetic information in such material is sufficiently intact to produce or "clone" a living mammoth seems improbable but not impossible.

The immediate purpose is to learn what changes have occurred in the proteins and nucleic acids along the evolutionary path from mammoths that roamed northern latitudes in the last Ice Age to modern elephants in India and Africa.

The researcher to whom the specimen, packed in dry ice, was consigned is Dr. Allan C. Wilson, a biochemist at the University of California at Berkeley. He met the shipment with extra dry ice to keep it frozen until he reached Berkeley last night.

Discovered Last June

I fDr. Wilson finds that the life-sustaining chemicals of the specimen, which weighs about one ounce, are unaltered after being freeze-dried for thousands of years, he may accept an invitation from the Soviet Academy of Sciences to help organize the study of more extensive samples.

The mammoth, a baby thought to have been about 6 months old, was discovered last June when frozen topsoil was being bulldozed in a search for gold in the gravel of an ancient Siberian riverbed. It appears to be the first such specimen discovered intact. Others had largely decomposed either before they were frozen or before they could be recovered.

In an interview while waiting for clearance of the specimen at Kennedy Airport, Dr. Wilson said that he was not certain whether it had been possible in the collecting process to avoid any thawing of the carcass. From what he has been told by collectors of other such specimens, he believes that all the specimens became thoroughly desiccated over their frozen centuris.e As a result, he said, it is possible that molecules in the carcass became cross-linked, making them insoluble and difficult if not impossible to handle and replicate.

The concern of agricultural quarantine officials has been that the specimen, which was provided by the Soviet Academy of Sciences, might harbor ancient bacteria unaffected by modern antibiotics. Dr. Wilson has agreed to keep the tiny bit of mammoth flesh and its derivatives in sterile isolation.

Dr. Wilson's hope is that it will be possible to extract from more ancient fossils enough biochemicals to trace the evolution of key molecules. Frozen mammoths and other relics of the Ice Age are at most a few tens of thousands of years old. Dr. Wilson would like to trace the record back millions of years.

He has been in touch with Dr. Andrei Antonov of the Moscow State University, who is engaged in similar research. Dr. Antonov has reported "puzzling" results from his own analysis of a specimen from the mammoth baby. The baby mammoth is 45 inches long, 41 inches high and has a trunk 22 inches long. As described in the December issue of Smithsonian Magazine, the tip of the trunk has two "fingers" like those seen in Ice Age cave paintings.

Dr. Wilson's laboratory has antibodies to Indian elephant serum albumin, a very stable and abundant protein, derived by injecting such material into rabbits. The manner in which these antibodies react when confronted with extracts of the mammoth tissue should provide the first indication as to whether the long-frozen material has been greatly altered.

A similar analysis has been conducted on material from a partially preserved baby mammoth found in 1948 near Fairbanks, Alaska, and no wat the American Museum of Natural History in New York. Initially a test for the presence of elephant albumin seemed weakly positive, Dr. Wilson said, but follow-up tests showed that the rabbit antibodies were reacting against trace contaminants of bovine serum.

March 9

Alaska Climate Atlas Printed

A new Alaska climatic atlas and a set of six climate maps are now available from the university's Arctic Environmental Information and Data Center (AEIDC) in Anchorage.

The three-volume *Climatic Atlas of the Outer Continental Shelf Waters and Coastal Regions of Alaska* was compiled jointly by AEIDC and the National Climatic Center's Environmental Data Service in support of the National Oceanic and Atmospheric Administration's Outer Continental Shelf Environmental Assessment Program for Alaska.

One volume covers the Gulf of Alaska, another the Bering Sea, and the third the Chukchi and Beaufort seas. Each volume contains maps, graphs and tables bearing on climatology of the area covered and presents analyses of conditions which would affect the construction and operation of offshore oil drilling and production platforms and other energy-related structures.

The Russian Mission, Alaska, settlement became the site of the first Yukon trading post of the Russian-American Company in 1837, says National Geographic.

Antarctic Laboratories: The Many Uses of Cold

By WALTER SULLIVAN

The great blanket of ice that covers Antarctica, holding more than 90 percent of the world's fresh water, has now emerged as an invaluable record not only of past events on earth, such as periods of volcanic eruption, but also of extraterrestrial phenomena — ancient rains of meteorites from space and perhaps even the history of solar activity.

Because seasons in the Southern Hemisphere are reversed, it is summer in Antarctica now — a period of continuous daylight — and the current spurt of research activity there is already past its peak. The recent weeks have been marked by exciting discoveries and irksome frustrations.

In previous years it had been found that bacteria, algae and fungi occur throughout much of the ice-free area of Antarctica, but last week it was reported that some organisms penetrate granular rocks so that they gain shelter but still receive filtered sunlight through quartz crystal, mica or other partially transparent material. They have turned the rocks into minuscule cold frames.

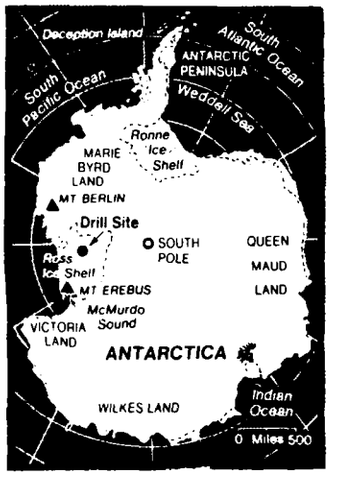
A new link in the "ring of fire" that encircles the Pacific Ocean has been found in the Hal Flood Range of Marie Byrd Land. Although the mountains are at least partially of volcanic origin, the discovery of fumaroles on Mount Berlin, 10,400 feet high, is the first hint of current volcanic activity along 3,500 miles of coastline flanking the southernmost part of the Pacific.

At the western end of that stretch Mount Erebus often trails a long plume of condensed steam across McMurdo Sound. There is also geothermal activity along the nearby Victoria Land coast. In the opposite direction the next manifestation of latent volcanism is the flooded crater of Deception Island, near the northern tip of the Antarctic Peninsula. It provides an excellent harbor, but occasionally its water boils.

A year after the first unsuccessful attempt to drill through the apron of continental ice known as the Ross Ice Shelf a penetration of the 1,375-foot-thick ice was achieved. This success permitted entry of cameras, fish traps, bottom coring devices and other apparatus into a sea about the size of Spain that has been isolated from sunlight ever since the ice shelf formed, thousands or millions of years ago.

Crustaceans inhabiting that "lost world" (isopods, amphipods and euphausids) were trapped or photographed. A six-inch fish was seen and water measurements and tests were made. But efforts to keep the hole open by means of a dangling heated cable failed and it is frozen solid.

The hole had been made with a device whose supersonic jet of hot flame is normally used in quarrying granite. According to Dr. Edward P. Todd, director of polar programs for the National Science Foundation, which



funded the program, the tendency of ice to flow in and strangle the hole made it necessary periodically to lower the jet drill and ream the hole.

The harsh conditions of Antarctica were hard on the apparatus — its hoses and compressors. Sometimes the flame extinguished when the drill was hundreds of feet down the hole and had to be hauled out.

Closure of the ice choked last year's drilling and all attempts this year to free the drill used in that effort by means of hot water circulation failed. Finally a dynamite charge was fired about halfway down the hole, which had come within a few hundred feet of the bottom, enabling the drillers to salvage half the drill pipe and start a new hole nearby to extract ice cores. The coring was done by mechanical drilling, keeping the hole filled with diesel oil to prevent ice closure — a method less desirable than dry drilling because of fears that the cored ice samples will be contaminated by the oil.

Traditionally such cores are of interest because they embody samples of past precipitation (containing clues to earlier climate) as well as volcanic ash, dust from past droughts, and bubbles of ancient atmosphere trapped in the ice. The ice has been formed by centuries of snowfall, as the snow is gradually compressed into solid ice by the weight of added layers. Air that had been mixed with the snow is then preserved as bubbles in the ice.

Now the ice cores have revealed a new discovery: The abundance of nitrogen compounds in snow layers at the South Pole seems to reflect the level of sunspot activity at the time when that snow fell. The compounds are ammonia and nitrate (nitrogen trioxide).

In other parts of the world such an effect of solar activity would be completely masked by nitrogen compounds of biological origin but, until the South Pole Station was established in the late 1950's, no place on earth was more isolated from life's byproducts.

The nitrogen record has been obtained from analysis of ice cores extracted at the South Pole several years ago. It seems to show the so-called Maunder Minimum, from 1645 to 1715, when sunspot activity apparently vanished. Until the research efforts of Dr. John A. Eddy of the National Center for Atmospheric Research in Boulder, Colo., an absence of sunspot records from that period was attributed to a lack of observations.

Now Dr. Eddy has convinced a large segment of the scientific community that the sun is a variable star and that the sunspot cycle, which normally reaches a maximum every 11 years, faded away during the 17th century when the earth, at least in northern latitudes, went through a "little ice age."

How solar activity could stimulate the formation of nitrogen compounds in the air is uncertain. Some suspect electrical effects from auroral activity may be the answer. The study of the correlation between the sun and the ice is being directed by Dr. Bruce C. Parker of Virginia Polytechnic Institute and State College in Blacksburg and Dr. Edward J. Zeller of the University of Kansas in Lawrence.

If the solar effect on "fixation" of nitrogen compounds is confirmed it should become possible, with Antarctic and Greenland ice cores already in cold storage, to extend the history of solar activity back 100,000 years or more and see if it bears on known climate changes of the past. The cores analyzed to date represent only snowfalls of the last few centuries.

The meteorite discoveries continue those of a year ago near McMurdo Sound and represent a revolutionary change in the study of such visitors from space. Flowing ice has carried an accumulation of many centuries of meteorite falls from the vast reaches of the hinterland to where the ice has been stalled by mountains. There the meteorites, large and small, have been excavated from the ice by wind erosion and stand out, black, against the ice. Not only are the meteorites abundant but cold storage has preserved them from much of the chemical and physical alteration they would have suffered in warmer latitudes.

During the current season special pains are being taken to collect meteorites without contamination. Helicopters land downwind from a find. The specimens are packaged on the spot for shipment (in some cases frozen) to the special facility near Houston designed for handling moon rocks under sterile conditions. The Japanese made the first such discovery and are working on the collections with Dr. William A. Cassidy of the University of Pittsburgh.

Walter Sullivan is science news editor of The New York Times and eponym of Sullivan Ridge in Antarctica.

Couple Spends Year In Antarctic

SAN DIEGO, Calif. (AP) — John and Donna Mitchell Oliver are back from a full year in Antarctica -- the first husband-wife team ever to spend a winter at a government research station on the frozen continent.

"I think we're going to see a lot more women working down there soon," said Mrs. Oliver, a 29-year-old laboratory technician at Scripps Institution of Oceanography where her husband is a graduate student in biological oceanography.

The only woman among 87 men at McMurdo Base, she helped her 31-year-old husband collect animal types and studied the effects of winter isolation on 43 of the men.

The companionship "makes the winter a lot more bearable," Oliver said in an interview after their return. But he said selection of government explorers "should be based solely on an individual's work qualifications and personality — without regard to sex."

Mrs. Oliver returned with 800 pages of notes and 43 taped interviews.

The American explorers, she said, "suffer from lower motivation levels, shorter attention spans, lower energy levels and a sort of dullness which is hard to describe." But generally, said Mrs. Oliver, "I saw no serious psychological problems develop among the men."

Dr. Edward P. Todd, director of the National Science Foundation's division of polar problems, praised the Olivers in a statement from Washington as "a new breed of biological problem solvers."

"The success of the Olivers' effort may encourage other research couples to participate in winter Antarctic programs funded through the National Science Foundation," Todd said.

Only two other women have spent a winter at the South Pole with the government's blessing. Dr. Mary Alice McWhinnie and Sister Mary Odile Cahoon lived and worked together at McMurdo in 1974.

In 1947, as part of a small private expedition with their husbands, Jennie Darlington and Edith Ronne wintered in Antarctica. March 28

Scientists Study Old Tubes Of Ice

BUFFALO, N.Y.(AP) — Scientists at the State University of Buffalo are studying long, slender tubes of ice they brought back from an expedition to Greenland and Antarctica.

Dr. Chester Langway Jr. and his colleagues are trying to determine how today's atmosphere compares with, for example, the air Christ breathed.

As snow becomes glacial ice in places such as Greenland and Antarctica, air and dust are trapped, and the scientists thus have a permanent record of climatic data and atmospheric conditions. Jan. 14

Study of Ice May Yield Way to Gauge Solar Activity

By WALTER SULLIVAN
The New York Times

WASHINGTON, Jan. 19—A way to measure the levels of solar activity over the last several hundred thousand years may have been found in analysis of successive ice layers excavated at the South Pole.

If the method is confirmed by tests under way and projected, it would revolutionize efforts to assess the variability of the sun and the effects of solar cycles on climate.

From tests so far, it appears that abundances of two nitrogen compounds in ice layers formed by the snowfalls of successive years reflect the levels of solar activity during those years. The researchers believe that they have been able to trace the 11-year sunspot cycle back to A.D. 1150.

While others are not fully persuaded of this, there seems clear confirmation, in the nitrogen analyses, of the so-called Maunder Minimum, from 1645 to 1715, when virtually no solar cycles occurred and almost no sunspots were seen. The period is named for E. Walter Maunder of the Royal Greenwich Observatory in England, who drew attention to it in 1893.

Eddy Research Historic

Not until the historic research of Dr. John A. Eddy, however, has such irregular behavior by the sun been widely accepted. It was theretofore believed that sunspots were not recorded because no one had bothered to observe them.

If the nitrogen finding proves valid, Dr. Eddy said today, it should be possible, from analyses of the ice deposits on Antarctica and Greenland—in places more than two miles deep—to extend the solar record back hundreds of thousands of years. Otherwise, the best that can be hoped for, he said, is an 8,000-year record based on carbon 14 levels in tree rings.

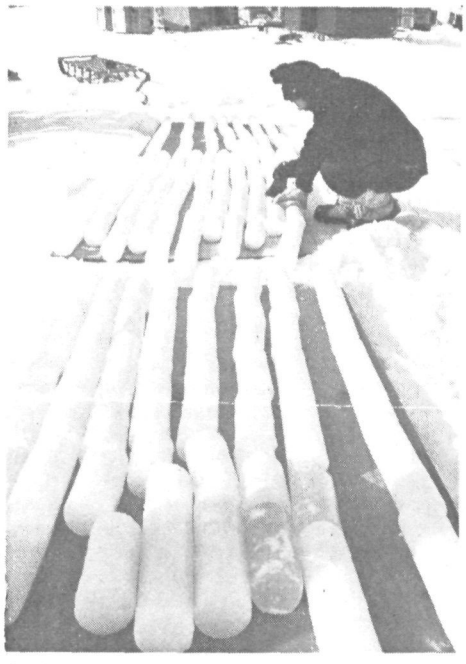
Carbon 14 is produced by high-energy cosmic rays reaching the earth from space. The intensity of such radiation is controlled, to an observable extent, by magnetic fields sweeping out from the sun when sunspots and solar eruptions are frequent. The carbon 14 can be analyzed in the rings in very ancient trees.

The suspected effect on nitrogen compounds in polar snow and ice derived from a conversation more than a year ago between Dr. Bruce C. Parker, professor of botany at Virginia, Polytechnic Institute and State College in Blacksburg, and Dr. Edward J. Zeller, professor of geology and physics at the University of Kansas in Lawrence.

Ice Is Examined

They were pondering why the southernmost oceans have been richly "fertilized" by nitrogen compunds that do not seem of biological origin. Is it possible, they wondered, that they come from polar ice through the melting of iceberg?

They first looked at ice taken from a deep hole drilled beneath the South Pole Station for highly sensitive gravity measurements. The abundance of nitrogen compounds clearly varied with the depth from which the ice had come, but it was also evident that the ice had been contaminated.



Analysis of the ice cores taken from the shelf indicated, among other things, that the medium-depth ice may be 5,000 years old.

OFFICIAL PHOTOGRAPH U.S. NAVY

In storage, however, at the archive of ice cores maintained by the National Science Foundation at the State University of New York in Buffalo were "clean" cores. They had been extracted at the pole to a depth of 100 meters (328 feet) in 1974 and flown out under refrigeration.

Samples of the ice were cut to lengths of five to eight inches, the assumed annual accumulation, and 364 in all were analyzed. The cyclic variation occurred in both ammonia and nitrate.

The former is a compound of three hydrogen atoms mated with one of nitrogen. The latter comprises three oxygen atoms and one of nitrogen. Both seemed to follow a cycle close to 11 years, which is the rate at which sunspot maximums occur.

Excited but Cautious

Dr. Eddy, who is with the National Center for Atmospheric Research in Boulder, Colo., reached by telephone, said, "It is so easy to see a cycle if you are looking for it."

He recalled many occasions when, for a time, it appeared that phenomena on earth were in pace with the sunspots.

"I am excited," he said of the findings, "but terriby cautious." That the Maunder Minimum shows up in the data, he added, is more convincing. The period coincided with the "little ice age," leading some to suspect that the two were related.

One uncertainty is whether the ice samples are being segregated on an annual basis. Antarctic snow accumulation does not lay down as clearly defined annual layers as on the Greenland ice cap, where some melting often occurs in summer.

The South Pole is about as remote from any source of biological activity that could produce nitrogen compounds as anyplce on earth. It is hoped that central Greenland can offer a similar environment, where any such compounds would clearly be of nonbiological origin.

It is known that nitrogen compounds can be formed, or "fixed," by electrical effects, and one suggestion is that over the poles auroral displays play a role. Such displays are seen most often when the sun is active.

Two of Dr. Parker's associates, Lawrence E. Heiskell and william J. Thompson, have been helping in the study. Mr. Heiskell, reached by telephone, said that he returned two weeks ago from the pole, having cofllected new samples in an effort to complete the most recent part of the record.

To obtain snow free from contamination by camp pollutants, he dug a pit nine and a half feet deep three miles from the base. Last winter, newly fallen snow was also collected for the project (it is now summer in the Southern Hemisphere).

It may be possible to confirm the effect through annual snow collections. Dr. Eddy said that sunspot activity was rising fast, and that an unusually intense maximum might occur in late 1979.

Drs. Parker and Zeller are operating under several grants from the National Science Foundation.

New base in ice

South Africa is to build a new base in the Antarctic to replace the existing one which has iced up.

The *Pretoria News* reports that the present base, built seven years ago, is now lying under 10m of snow and ice and has to be abandoned.

The new base will be built on a British pattern. First, a 2m deep trench will be dug into which prefabricated tunnel sections will be placed. Then the new base buildings will be built inside the tunnel.

They will be egg-shaped – this being the best shape to withstand pressure – and they should last for 12 years.

South Africa's two previous Antarctic bases, built in 1962 and 1971, were both of wood.

Antarctic expedition

Fifteen members of the South African Antarctic research team left Table Bay this week on board the supply ship, RSA, for the South Pole, reports *Die Burger*.

Fourteen members of the team, which consists of scientists, meteorologists, radio technicians, mechanics and a doctor, tried out their new Muskeg snow tractors at Bloubergstrand before they left.

The four Muskegs were specially built in South Africa for Antarctic conditions at a cost of R80 000. Jan. 13

Georgia Scout Going to Antarctic

Eagle Scout Mark W. Leinmiller, 18, of Marietta, Ga., has been chosen to participate in a National Science Foundation Antarctic scientific expedition late this year.

Rob K. Moran, 18, of 6712 Cylinda Sue Circle, Fort Worth, Tex., was named alternate.

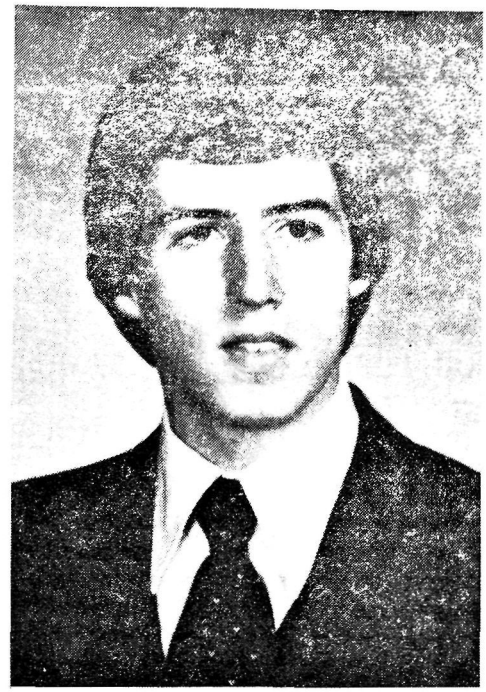
The winner was selected after four days of intensive screening interviews by a panel of eight judges representing the Boy Scouts of America and the National Science Foundation. Other finalists in the competition were Harris R. Buttz, 19, of 814 Summit Drive, Minot, N.D.; Merle W. (Larry) Lawrence, Jr., 19, of 5012 W. Edith Court, Bartonville, Ill.; Scott E. Miller, 18, of 1136 La Vista Road, Santa Barbara, Calif.; and Stephen W. Weirich, 18, of 127 Imperial Ave., Westport, Conn.

Leinmiller will work on a glaciological and geological project, "A study of the interaction of the Ross Ice Shelf and Byrd Glacier," headed by Dr. Robert Thomas and Dr. Terence Hughes of the University of Maine at a large field camp on the Darwin Glacier, 150 nautical miles from McMurdo. That project and several others are under the supervision of Dr. George Denton, also of the University of Maine. Leinmiller chose this project from among several available as the one most closely matching his own scientific interests.

The selection process that ended June 7 began early this year. More than 1,000 applications were received by 225 local Scout councils. Area judging reduced the number to 29 and regional judging cut that to the six finalists.

Leinmiller attends Georgia Tech and is a graduate of Sprayberry Senior High School in Marietta. He is assistant Scoutmaster of Troop 750 of the Atlanta Area Council. In high school, he played varsity soccer, was president of the Ecology Club, was a semi-finalist in the *National Merit* Scholarship competition, and was chosen as WSB Radio's Outstanding Young American. He has served for two years on the staff of the Philmont Scout Ranch, Cimarron, N.M., and will be Rayado Trek coordinator there this summer; has solo hiked 850 miles on the Appalachian Trail; and has been active in the Order of the Arrow.

Leinmiller is the third Scout to go to the Antarctic. In 1928, Eagle Scout Paul Siple was chosen to be a member of Commander Richard E. Byrd's expedition to Little America. In 1957-58, Eagle Scout and Explorer Richard Chappell was a member of the U.S. International Geophysical Year working party.



Mark W. Leinmiller

Chappell, now a professor of biology at Hunter College in New York, headed the selection panel. Siple's widow, Mrs. Ruth Siple, was one of the other seven members.

The five other finalists will participate in a special, week-long winter survival session of Operation Okpik at the Charles L. Sommers Wilderness Canoe Base, Ely, Minn., one of the BSA's High Adventure bases, next winter.

The Reader's Digest Association is cooperating with the Boy Scouts of America and the National Science Foundation's Division of Polar Programs in the 1978 project.

U.S. Names a Glacier For College Professor

COLLEGE PARK, Md. (AP)—Having a glacier named for him did not leave a University of Maryland professor cold, but he admitted, "There is probably less to it than meets the eye."

The United States Board of Geographic Names honored Theodore J. Rosenberg by naming a glacier for him in recognition of his research in Antarctica, where he and a team of scientists from the university were studying energy particles and electromagnetic waves.

Prof. Rosenberg said he did not know what guidelines were used for naming places in Antarctica after people.

He said the glacier bearing his name is 750 miles west of Siple Station, a research area on Antarctica's Palmer Peninsula. The professor said he did not know how big the glacier was and did not ever expect to see it.

ICEBOUND IN THE SIBERIAN ARCTIC, by Robert J. Gleason, Elec. Engr. '31. (Alaska Northwest Publishing Co., Anchorage. $4.95)

While still a student at the University of Washington, Robert Gleason found more adventure than most people do in a lifetime. In the summer after his junior year, he sailed out of Seattle as radio operator on the fur schooner *Nanuk*, expecting to be back as a senior in the fall. An electrical engineering student, he had already worked three summers as a radio operator in Alaska but had been only as far north as Juneau. For his final trip, he wanted to see the Arctic.

He little suspected, when he sailed out of Elliott Bay that June day in 1929 that more than a year would pass before he would see the Seattle waterfront again.

The *Nanuk* was bound for the Siberian Arctic on both a trade and a mercy mission. Her owner, Olaf Swenson of Seattle, had secured trading privileges with the Soviets. She was also to rescue a sister ship *Elisif* which had been icebound for nearly a year.

The voyage was icier, their progress slower, their capture by the ice pack sooner than supposed, and *Nanuk* too became locked in the Arctic ice off Siberia.

This was in the early days of aviation. Rescue attempts involved a sizable roster of Alaska's famed pioneer "bush pilots" and resulted in the death of one, Ben Eielson, and his mechanic Earl Borland. The *Nanuk's* plight, and the search for the downed rescuers, drew aircraft and pilots from all over the North, turning the ice near the ship into an international airfield.

Gleason was at the center of it all, his radio the ship's only contact with the outside world.

In this book the story is now told fully for the first time, amply embellished by Gleason's photographs and clippings. After rescue, Gleason went on to a rewarding career in aeronautical communications and is now retired in Maryland. The *Nanuk* went on to a career in the movies.

Akutug, an Eskimo delicacy, is made from the wedge of back fat of a caribou. The wedge of fat weighs from 20 to 30 pounds and is whipped while pieces of cooked caribou meat are added. It is said to have a flavor comparable to ice cream. The fat is also eaten plain.

Meteorite in Antarctica Is Found to Be Rare Type

By WALTER SULLIVAN

Microscopic examination of a meteorite found atop the Antarctic ice several months ago has confirmed that it is of the rare type laden with prebiological substances.

Some scientists believe that such meteorites, falling onto the primitive earth in great numbers, helped provide material making possible the emergence of life. At least two such meteorites have been found to contain a variety of amino acids, the building blocks of proteins.

An assumed ingredient for amino acid synthesis in space would be methane, the flammable, poisonous gas in which four hydrogen atoms are mated with one of carbon. This week National Aeronautics and Space Administration scientists reported, for the first time, the detection of methane beyond the solar system.

The meteorite was one of 310 samples collected in the Antarctic last December and January in the region west of McMurdo Sound, where mountains impede the flow of ice from the hinterland toward the sea. This and many of the other specimens were collected in a manner minimizing contamination, using boxes of the type with which astronauts collected lunar samples.

The specimens have been kept frozen at the lunar sample processing center near Houston, but slices from three of them have been sent to Dr. Brian H. Mason of the Smithsonian Institution's division of meteorites in Washington for examination. In a telephone interview yesterday, Dr. Mason confirmed that one of the three was of the rare type known as a type 2 carbonaceous chondrite.

It is the first to be found, he said, whose fall was not observed. Its composition resembles that of well compacted clay and it can survive only a few rainfalls. In Antarctica, however, rain is virtually unknown.

Meteorites of this type have a matrix formed of hydrated magnesium-iron silicate (much like serpentine, among earth rocks) that normally would be translucent when sliced and viewed under a microscope. In this specimen, however, so much carbonaceous material is included that it is opaque.

The weight of the specimen before slicing was only seven ounces, but there may be another sample among the remaining meteorites. Since they tend to break up during their fall it is suspected that the 310 samples came from 25 to 50 original objects.

Organic chemists, said Dr. Mason "are licking their lips" in anticipation of obtaining tiny samples of the carbonaceous chondrite. This one differs considerably in appearance from the Murchison meteorite that exploded over Murchison, Australia, on Sept. 28, 1969.

That object, whose incandescent debris fell onto an area seven miles long and two miles wide, contained at least 10 amino acids, six of them found in proteins.

The Antarctic ice sheet has proved to be an efficient collector and preserver of meteorites. Buried in snow initially, they are exposed to view again where the flowing ice becomes stalled against coastal mountains and is worn away by violent winds.

Dr. Mason said his specimen looked so fresh that it was hard to believe that it fell long ago. He will look for short-lived radioactive constituents typically formed within meteorites by cosmic ray bombardment during their long sojourn in space. The extent of their decay would indicate how long ago the object fell.

The interstellar methane has been detected by Drs. Kenneth Fox and Donald E. Jennings of NASA's Goddard Space Flight Center in Maryland. Radiotelescopes of the National Radio Astronomy Observatory at Kitt Peak, Ariz., and Green Bank, W.Va., were used.

With these emissions characteristic of six energy transitions in methane molecules were detected. The sources were in the direction of Orion A and two starlike objects. Orion A is thought to be one or more stars and planets in process of formation. June 14

Argentina Reports Antarctic Wedding

BUENOS AIRES, Feb. 18 (AP)—First Sgt. Carlos Alberto Sugliano and Julia Beatriz Buonamio were married this week at the Argentine Army's Esperanza base in Antarctica, local news agencies reported.

They said the wedding was the first to be held in Antarctica, and that the ceremony was held in a headquarters building while a blizzard raged outside. Argentina has permitted the wives and children of some of the 40 soldiers and scientists at Esperanza to live in the isolated base in an experiment to determine what problems families would encounter.

California Doesn't Want Navy's Radioactive Rock

PORT HUENEME, Calif., March 12 (UPI)—A Navy ship docked today in preparation for unloading 5,500 tons of radioactive crushed rock and dirt from Antarctica, but a state health official said the Navy would have to get the contaminated material out of California.

It was the second shipment of radioactive matter brought here by the Navy because of an 11-nation treaty prohibiting dumping of radioactive substances in the Antarctic.

"We're going to allow it on a temporary basis," said Jerome Lackman, head of the State Departmeent of Health. "My standpoint is it will be here just long enough to be taken to an approved dumping site, and there is no site in California approved for dumping of radioactive waste."

He said the closest approved site was in the Nevada desert

Lieut. Tom Crane of the Naval Nuclear Power Unit on the facility, said that the material was not dangerous.

"There is in Ventura County natural rock formations with twice the background radiation as is found in the material from Antarctica," he said.

Vast Iceberg Drifting In the South Atlantic

LONDON, May 3 (AP)—An iceberg with an area 36 times that of Bermuda and inhabited by penguins was reported today to be drifting slowly in the South Atlantic from the Antarctic in the direction of Africa.

The iceberg, said to measure 32 by 24 miles, with a draft of at least 600 feet, was observed by scientists aboard the British Antarctic survey ship John Biscoe, which docked at Southampton yesterday. "It looked really magnificent, with 100-foot sheer ice cliffs," said the chief officer, Andy Baker, in an interview printed in The Daily Telegraph.

British scientists and Defense Ministry officials who have been tracking the iceberg said they believed it posed no danger to shipping because it was not on any recognized lanes and should break up when it reached warmer waters. It is now about 200 miles northwest of South Georgia Island, east of the southernmost tip of South America.

G. J. SEDOV

Argentina Honors Antarctic Baby

ESPERANZA ARMY BASE, Antarctica (AP) — The first human ever born on this desolate continent, just two weeks ago, already has been honored by the Argentine government which is trying to reinforce its territorial claims on Antarctica.

The fact that Emilio Marcos Palma, born Jan. 7 at the base infirmary, is an Argentine citizen, apparently delighted President Jorge Videla, who sent gold medals, two volumes of Argentine history and other gifts to the child.

Young Emilio and the other three youngsters now living here are the children of the base commander, Capt. Jorge Palma. Before his family arrived only soldiers lived here.

BUT THE ARGENTINE government is planning to populate the base with more women and children. Next month, five Argentine soldiers, their wives and 15 children are scheduled to arrive. Two of the women are pregnant. A sixth army volunteer plans to bring his fiance and they will be married here.

Argentina claims a pie-slice of Antarctica whose edges diverge at a 49-degree angle from the South Pole. The area overlaps territory claimed by Chile and Britain. France, Norway, New Zealand and Australia claim other parts of the continent.

Six countries, including the United States and the Soviet Union, have bases on the continent but refuse to recognize any territorial claims.

All 13 countries signed a treaty in 1959 guaranteeing peaceful development of the continent as a scientific center for the world's benefit and postponing decisions on territorial claims for 30 years.

Countries with territorial claims have intensified research and exploration and built transport and communication bases — such activity is necessary under international law to back up territorial claims.

But Argentina, which has seven bases in Antarctica, has gone farther by sending in families. And two teachers are to arrive in March to set up a school for the children.

Mrs. Silvia Palma holds two-week-old Emilio, Antarctica's first-born human.

Like the Argentine soldiers here without their families, the newcomers will spend one year at the base. Next summer other families will replace them.

SILVIA MORELLO de Palma, the mother of the children, says she hopes her infant son will return to Antarctica some day.

"By the year 2,000, there will be better ways of making life comfortable here," she says.

Life at the base is about as comfortable as it can be in the Antarctic. The base is located at the northernmost tip of the Antarctic Peninsula 600 miles from Cape Horn. It is the only part of the continent not permanently covered by ice.

In the summer, temperatures rise almost to the freezing mark, if there is no wind, and the two older Palma children have been able to play outside occasionally. Jan. 23

Greenland commemorates the 100th anniversary of the birth of Jorgen Bronlund, the first West Greenlander to meet his kinsmen, the Eskimoes of Thule, with a postage stamp due on Oct. 20.

Bronlund took part in the 1903-04 expedition to northern Greenland which led to the meeting. He and two other members of the 1906-07 expedition to northern East Greenland froze to death during the trip.

The red 1-krona stamp, designed by Frederik Holm and engraved by Czeslaw Slania, features Bronlund from a 1906 portrait by Achton Friis, and a view of the Bay of Disko at Jakobshavn, Bronlund's native town.

The stamp's design was awarded the first prize in the 1976 stamp competition arranged by the Greenland postal administration,

Ice Cap Melting May Flood Areas of Earth

BY ROBERT MUSEL March 1

LONDON (UPI) — One of the recurrent science fiction scare stories is the flooding of the world by melting ice of the polar caps.

Dr. J.H. Mercer of the Institute of Polar Studies at Ohio State University now argues in an article in the British scientific magazine Nature that this possibility must be taken seriously.

Mercer contends that if the current growth in fossil fuel consumption persists, it is possible that the so-called "greenhouse effect" could melt the west Antarctic ice cap raising the sea level by some 15 feet over the next 50 years, thus precipitating a global disaster on a massive scale.

Carbon dioxide released on the atmosphere as a result of the burning of coal and oil traps sunlight bounced back from the Earth. Infrared radiation trapped in this way — the greenhouse effect — causes an increase in atmospheric temperature.

But according to Nature there has always been considerable disagreement among scientists over the exact magnitude of the melting this increase would cause.

Mercer, the magazine said, is "prepared to stick his neck out and give a precise prediction of the scale of possible changes.

"Many more sophisticated calculations are still to be made but the fact remains that an estimate of this sort can and has been put forward," Nature said. "Scientists and politicians must now feel more inclined to take the threat of a major melting of the Antarctic iceshelves more seriously."

Mercer says that if the recent growth rate of fossil fuel consumption continues, the carbon dioxide content of the atmosphere is expected to double in about 50 years. Some estimates of the effect of this doubling envision a rise in temperature that would cause rapid melting in Antarctica.

"Although the models are known to be crude and over-simplified, so that the climactic changes that will actually occur will no doubt differ considerably from their estimates," Mercer wrote, "there is no way of knowing whether the models err on the optimistic or pessimistic side.

"If the carbon dioxide greenhouse effect is magnified at high latitudes as now seems likely, deglaciation of west Antarctica would probably be the first disastrous result of continued fossil fuel consumption. If so, major dislocations in coastal cities and submergence of low-lying areas such as much of Florida and the Netherlands lies ahead.

"More sophisticated climactic modelling may show that the outlook is less alarming than this but on the other hand it may show that the situation is even more threatening."

Recommending close satellite surveillance of the ice cap, he said it was "a disquieting thought" that the melting may be part of the price that must be paid to buy enough time for industrial civilization to make the changeover from fossil fuels to other sources of energy

N.Z.'s loneliest outpost

By MARGARET CULLEN, Antarctic Division D.S.I.R.

Visitors to New Zealand's Vanda Station in Antarctica are immediately aware of the tranquillity that surrounds this place, the sense of timelessness. Only the muted whirr of a helicopter high above or the flight of a solitary skua gull breaks the stillness of the dry desert air.

Built in 1968, in the Wright Dry Valley, 130 km west of Scott Base, Vanda Station is the second and more remote of New Zealand's two Antarctic bases and the only one on the Antarctic Continent.

There are three main dry valleys, the Victoria Valley in the north, the Taylor Valley in the south, and the Wright Valley in the west. Together these three valley systems expose 4000 square kilometres of moraines, sediments and rocks — an oasis on the edge of the ice sheet. Although they form only a small part of the entire continent, they are, nonetheless, a fascinating scientific anomaly.

A bird's eye view, obtained from a helicopter flight above the valleys, reveals that they are topped by unusual rock formations of every shape and size. The arid monotony of the steeply sloping valley sides is broken only by the sight of an occasional glacier descending to the valley floor.

The area is a geologist's paradise. Ventefacts abound but the would-be collector must be prepared for a long walk to claim his prize, for distances are deceptive. A point that appears to be only a few metres away will probably be three times as far. This phenomenon is caused by the clarity of the unpolluted air.

Every year, scientists from New Zealand and other Antarctic Treaty nations explore the Dry Valleys in an attempt to answer some of the many questions which their existence poses. Unlike Ross Island, where Scott Base is situated, the area is virtually free of snow and ice.

The reasons for this paradox of nature are still being determined but research so far indicates that, several thousand years ago, the area was glacial. The glaciers have gradually receded and left this vast expanse of granite rock and scree exposed to the diurnal wind that blows up the valley from east to west.

Very low precipitation and the effect of the wind, which lifts the temperature, often as high as 15 degrees during the summer, are only a few of the climatic features peculiar to this region.

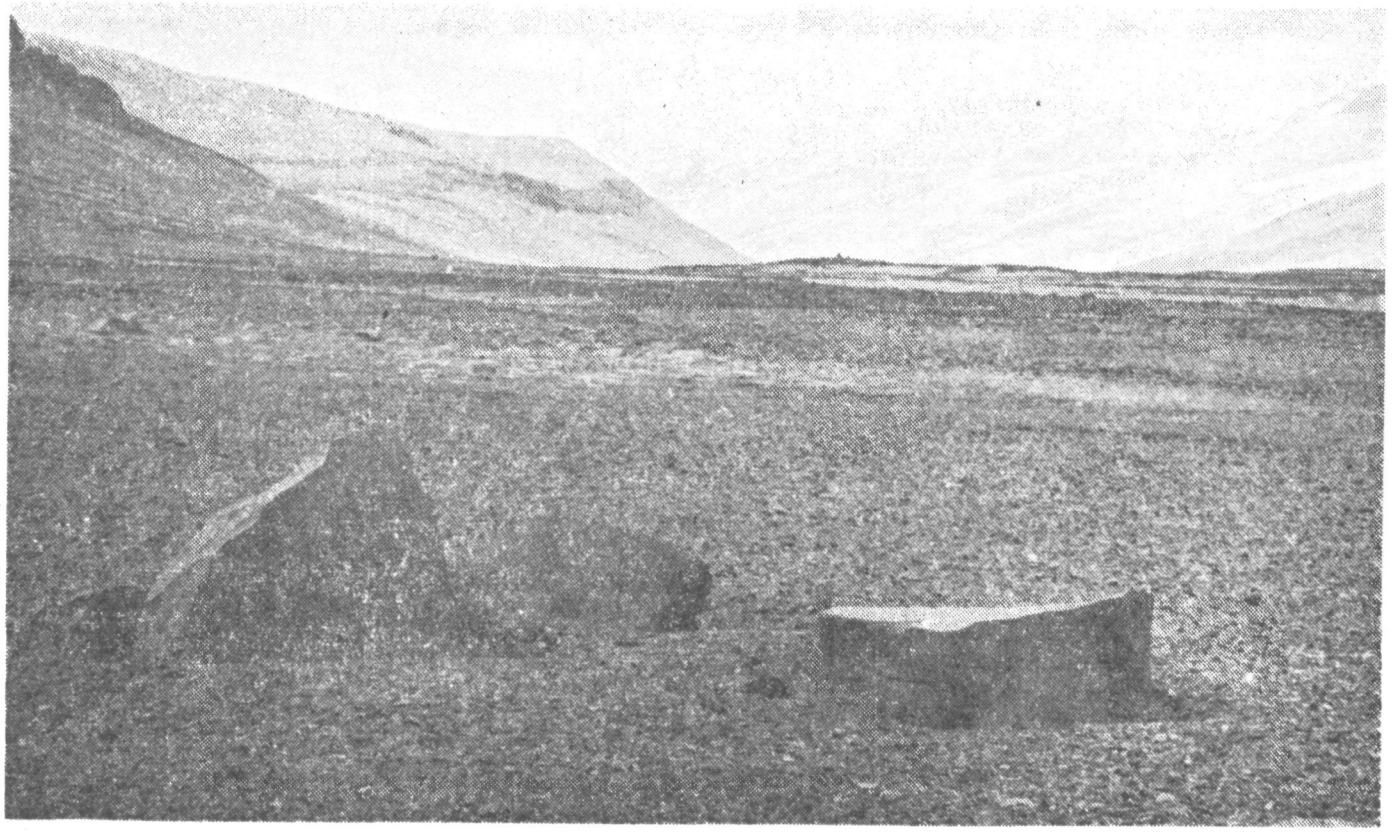
Vanda Station, a cluster of half a dozen green huts on the shores of the Onyx River, is run, during the summer only, as part of New Zealand's Antarctic research programme. The "oasis" sign above the door is an apt description, for apart from the mummified carcases of crabeater seals that have long since died on their journey away from the sea, there is no animal life to be seen anywhere.

Three men — leader, technician, and meteorologist — are stationed at Vanda each season. Their task is to work the scientific equipment which records climatological observations and solar radiation. They also take regular measurements of the flow of the Onyx River and the ice thickness and temperature of Lake Vanda. The Onyx River has its source at the coastal end of the Wright Valley and is one of the few rivers in the world that flow inland. Lake Vanda is the largest lake in the Dry Valleys and serves as a receptacle for the salts and sediment that are washed down the Wright Valley. The levels of most of the other Dry Valley lakes are rising — but this indication of a warming trend is contradicted by the unmoving alpine glaciers.

One of Vanda Station's most important functions is as communications centre for field parties. A 24-hour radio watch is maintained.

This season, New Zealand has seven field parties living and working in the vicinity of Vanda for periods that vary from one to three months. Their activities cover a wide range of earth sciences, including soil studies, geology, glaciology, and geophysics. A group of scientists from the D.S.I.R. Soil Bureau, who spent two weeks in the Wright and Taylor Valleys this season, discovered that the soil found in this region is very similar to that found on Mars.

Small, isolated, remote — Vanda is all these things. But its importance as a scientific research station and as a refuge for footsore and weary field parties will ensure its existence for a long time.



Ventefacts—dolerite-like rocks which have been planed and smoothed by the diurnal wind that blows up the Wright Dry Valley.

Eskimo Rally 'Ice Bloc'

By Tom Tiede

BARROW, Alaska—(NEA)—If as they claim the world's Eskimos have been bent, folded and mutilated by relentless 20th century exploitation, it is not difficult to understand why.

There haven't been enough of them to fight back. Numbering no more than 80,000 altogether, Eskimos constitute one of the tiniest ethnic groups on earth. What's more, they are spread thinly and without historic connection across the wide roof of the world. Alaska has 24,000, Canada has 15,000, Greenland has 38,000, and the USSR, an estimated 2,500.

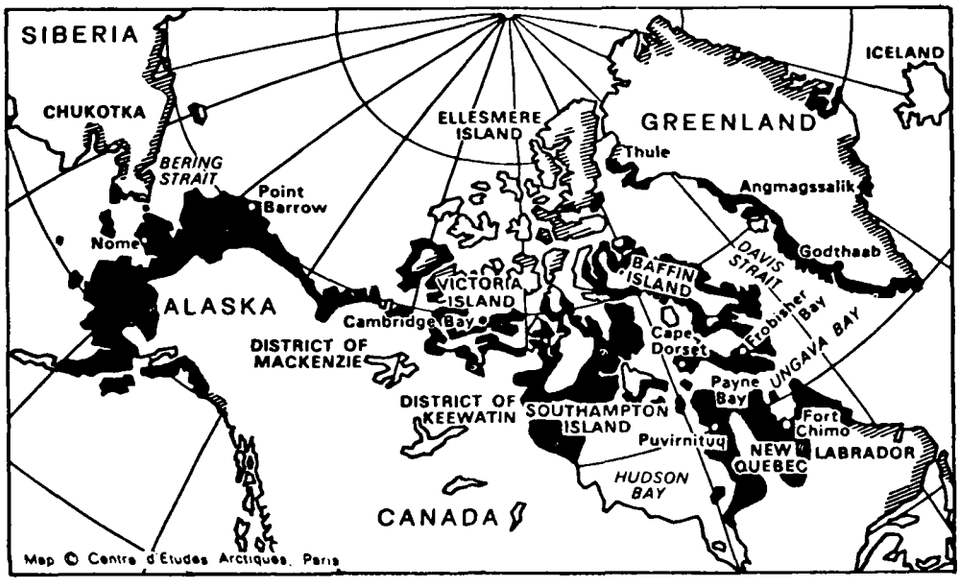
Accordingly, increasing numbers of Eskimo leaders believe the future of the people is dependent on their ability to consolidate what strength they have. An "ice bloc," as it's called. The theory is that Eskimos everywhere must join hands if they are to become, as they wish, aboriginal stewards of the Arctic.

The process is already in motion. U.S. Eskimos are now financing a circumpolar coalition whose concern is Eskimo power. Last year 54 Inupiats (people) from three nations met in Alaska to chart a course. Though little note was taken then, officers of the ice bloc insist it's an idea whose time has come.

In fact, some say it's past time. Eben Hopson, Alaska's most influential Inupiat, decries world values that "try to preserve whales but not Eskimos." Hopson says Eskimo land has been raped, Eskimo culture has been polluted, thus "the Inuit's only hope is to form a common defense across the Arctic."

At present defense headquarters is here in Barrow, the top of the nation. Barrow is also the capital of Alaska's sprawling North Slope Borough, an 88,000 square mile political entity that is larger than 39 of America's 50 states. Hopson, 56, has been mayor of the borough since it was formed in 1972.

The circumpolar Eskimo coalition is Hopson's idea. And if it works it will be one of the few times in history where related people of various nations have united in community. The Jews have done it, of course. But perhaps never before has so small a group of scattered people tried to form political clout.



Tiny Eskimo population is spread thinly across four territories: Greenland (Denmark), Canada, Siberia (USSR) and Alaska. Leaders believe the future of the people is dependent on their ability to consolidate what strength they have. —(NEA Photo)

For Eskimos, Hopson says the clout may save the race. Inupiats have lived in the sub Arctic for at least 40,000 years, and in the Arctic itself for perhaps 6,000, but the future is not bright. Already, autonomous groups of native hunters have disappeared. And Hopson says Eskimo culture loses ground daily.

Part of the disintegration is the natural tide of human affairs. Snowmobiles have replaced dog sleds here. Television images are brought in by a satellite fixed to follow Alaska's celestial spin. Also, obviously, it's hard to keep a man in an igloo when the jobs, the money and the comforts are in Anchorage.

Yet the greater problem, according to Hopson, is outside aggravation. Alaskan Eskimos decry the seizure of their land by industrialists; Canadian Eskimos charge their government is unresponsive; and in Greenland, where Eskimos outnumber tanniks (whites) four to one, officers of the Danish Realm still rule.

The troubles are particularly severe where big money is involved. Alaskan Inupiats are still bitter because the giant Prudhoe Bay oil complex was built "without anyone asking our opinion." Some Eskimo militants continue to talk of blowing the pipeline up, as a guerrilla warning against future trespass.

Actually at this point, pipeline sabotage would be unwise for North Slope Eskimos. Oil tax revenues presently finance most borough services, and Hopson has used at least $1 million of the royalty cash to set up the Inuit ice bloc. Without the hated pipe, ironically, Eskimos would be worse off than ever.

Still, militant hyperbole is common conversation here. Hopson, who is forever agitated, is considered to be merely moderate. Others in the circumpolar coalition are far more radical. Jon Buckholtz, an aide to Hopson, says some younger Inuipitas "want to get their guns now and fight off the world."

The firebrands do not go unnoticed. There is thinking in Washington that they dominate the Eskimos coalition, and are trying to carve out an independent nation above the Arctic circle. The state department boycotted last year's Eskimo conference for this reason. And there are rumors of FBI surrveillance.

Hopson says the government worry is nonsense; "Alaskan Eskimos are Americans. Canadian Eskimos are Canadian. I don't think many of them want it any other way. What we do want, however, is to meet with each other, to learn from each other. We have common problems; maybe we can find common solutions."

Ice bloc members are now drawing up a charter. With it the group hopes to get United Nations recognition as a multinational assemblage. The organizing is slow work, says Eben Hopson, but important. "If the Eskimos don't speak for themselves, it is apparent that others will do it for them—badly." April 13

Barrow Whalers Get Their Quota

BARROW (AP) — Whalers from Alaska's northernmost town have taken three bowheads in two days, reaching the quota set for Barrow under the newly established quota system.

Crews led by Harry Brower and Jake Adams, chairman of the Eskimo Whaling Commission, took two whales Tuesday. Robert Akin's crew took the first Barrow whale Monday.

The St. Lawrence Island villages of Savoonga and Gambell were the first to report whale kills this year. Each village was entitled to one whale. May 3

A famous ice island

by HILL WILLIAMS
Science editor
The Seattle Times

Joe Fletcher's Ice Island is on the move again, causing some interest in re-establishing an Arctic weather-research station on the famous chunk of ice.

The island, which juts above the flat sea ice like a small mountain, has been occupied by scientists off and on since 1952 as it slowly drifted around the North Pole. It probably has made two or three circuits in that time.

Each time the floating base would get stuck, either aground or jammed in the ice, its usefulness would diminish and the camp would be abandoned. The last time was in 1974 when Navy scientists bailed out after the island, also known as T-3, became stationary near the coast of Ellesmere Island in Canada's eastern Arctic.

In 1976, the Navy dropped instruments which, by signaling a satellite, would enable researchers to detect movement of T-3. It didn't move noticeably before the next winter silenced the instruments.

But last July the instruments unexpectedly came back to life and chattered to the satellite for a few days, giving the Navy a good fix. It turned out the island had moved about 180 miles, apparently resuming its slow drift around the pole.

With that information, technicians found T-3 on photographs from a weather satellite which will simplify tracking from now on.

THE ISLAND, born in mystery, has had a colorful scientific career.

T-3 is a huge piece of shelf ice, apparently formed near shore. Scientists once drilled part-way into the ice and found a century's accumulation of dirt layers. They apparently resulted from dirt and other debris blowing onto the ice during the short summer, mixing with meltwater and then freezing the next winter.

From the air, T-3 looks like a snow-covered land island, complete with peaks, valleys and even lakes and streams in the summer.

Joseph Fletcher, an Air Force scientist, made the first landing on T-3 in 1952, two years after it was sighted on aircraft radar. The island still bears the name of Fletcher, who later was on the University of Washington faculty.

Fletcher left the university in 1971 to direct polar programs for the National Science Foundation. He now is acting director of the environmental-research laboratory operated by the National Oceanic and Atmospheric Administration in Boulder, Colo.

A two-engine DC-3 once had to be abandoned when shifting ice left it stranded atop a towering pedestal on T-3. Fletcher liked to tell newcomers that he landed the plane on that pedestal — in a blizzard.

T-3 WAS one of an unusual number of chunks of shore ice that were found about that time. There was speculation that they were jarred loose by a Russian underwater nuclear test in the Arctic. The stories remained speculation.

Another story went around that T-3 had been spotted in the Beaufort Sea by the United States military in the late 1940s but was kept secret because the brass thought it might be a hitherto unknown land mass in the Arctic. Secrecy was lifted when pilots noticed it was drifting. Or so goes the story.

In 1970, the head of a Navy weather-research group on T-3 was shot dead by one of his technicians in an argument over homemade raisin wine. The assailant, charged under maritime law because ice islands legally are considered ships at sea, was acquitted two years later on grounds the shooting was accidental.

T-3 probably will last for centuries unless it gets swept into the North Atlantic Ocean, where it would slowly melt.

IT MAKES a lot more secure home-away-from-home for scientists than the thinner sea ice, which has a habit of breaking up at awkward times. That happened to a University of Washington crew on floe ice in October, 1975, while they were there as part of the Arctic Ice Dynamics Joint Experiment (AIDJEX.)

Everyone got out safely and the project was largely undamaged but it was a little hairy for a while.

AIDJEX purposely didn't use T-3, which was stuck at the time, or other huge chunks like it. The true ice islands are so big they actually change the weather near them. AIDJEX needed weather information from typical ice-covered sea, not "local weather" from an ice island.

The best guess is that T-3 was born near Ellesmere Island, not far from where it is now. March 19

WALRUS WATCHES PEOPLE

On the inside looking out is Ookie, a young female walrus at the Bronx Zoo who enjoys peering over her enclosure at onookers as much as they enjoy looking at her. Ookie is also notorious for coaxing visitors close to the edge of her pool and then splashing them. (NEA Photo)

Explorer, 80, recalls life on ice floe

EATONVILLE, Wash. (AP)—Martin Kilian went north in 1915 to find work—and ended up walking 2,300 miles through the arctic in one year, living on an ice floe for another year and eating seal meat for eight straight months.

"I wouldn't do it again for a million dollars, and I wouldn't take a million dollars for it (the experience)," Kilian, 80, said of his exploits with Arctic explorer Vilhjalmur Stefansson.

Eleven days after the treaty was signed, Kilian learned that the United States fought in World War I.

The expedition he was on, which mapped and explored areas off the northern coasts of Alaska and Canada for four years, received no news from home during the war. Expedition members learned of the conflict when they reached Nome in 1919.

"The year I was 18, I travelled 2,300 miles afoot," Kilian said.

At one point, Kilian and four other men volunteered to live for a year on an ice floe about 10-by-15 miles in size. The floe was 175 miles north of Point Barrow, in the Arctic Ocean.

The idea that polar explorers could live off the land, which Stefansson believed, was disputed by Roald Amundsen, discoverer of the South Pole.

"We did it," Kilian said. "I'm here. I lived off the land out on that ice where all we had was seal meat for eight months."

Polar expedition ship on the auction block

By GREGORY JENSEN

LONDON (UPI) — The British are selling HMS Discovery. It's like the Americans auctioning off an Apollo capsule.

"To all Antarctic men, HMS Discovery represents the heroic era of Antarctic exploration," says Sir Vivian Fuchs, a noted Antarctic explorer himself.

For 41 years this threemasted, wooden-hulled veteran has been moored on the River Thames in the heart of London. Some 300,000 visitors a year go through its below-decks museum recalling its great days and its most famous commander.

Discovery was Capt. Robert Falcon Scott's ship on his first Antarctic expedition, which began in 1901. Comparing her with Apollo is not entirely fanciful.

Antarctic exploration was the spaceflight of its day, a perilous voyage into the unknown. Many of the men who sailed in Discovery died on later voyages, Scott and Ernest Shackleton among them.

The 1,620-ton ship led an adventurous life even after Scott's first voyage.

She served the Hudson's Bay company, carried munitions to Russia on charter to the French government in World War I, and made a second voyage to the Antarctic in 1929. Since 1955 she has been a training ship for Britain's Royal Naval Reserve.

"But she's 77 years old now, and quite literally the rot has set in," said Cmdr. John F. Slocock, her nominal commanding officer.

"At the moment she's in a state where she could be preserved. But in a few years the option to preserve would be a very, very expensive business."

So the ministry of defense has decided the Discovery has to go — perhaps to a maritime museum of some sort. It is not particular about the price.

"Rather than scrap her, the ministry would happily give the ship to anyone who seemed capable of preserving her," a ministry statement said.

Slocock said replacing the ship's rotting timbers might cost $1 million, "though that's very much a ballpark figure." The defense ministry says it cannot spare that sum.

"I certainly hope someone takes her," said Edward Pyke, who has spent six years keeping the Discovery shipshape.

"She's a great old ship, and there's lots of history here."

He lifted down Capt. Scott's skis, made on board during the 1901 voyage, and recited tne outline of that trip as if he had been on board himself.

"She was frozen into the ice at McMurdo Sound for the best part of two winters and a summer," Pyke said.

"Two relief ships finally arrived with orders to abandon Discovery if they couldn't free her. That was the first time her life was threatened."

Scott made two sledge journeys into the Antarctic interior while the Discovery was icebound. It was the first penetration of the Antarctic continent.

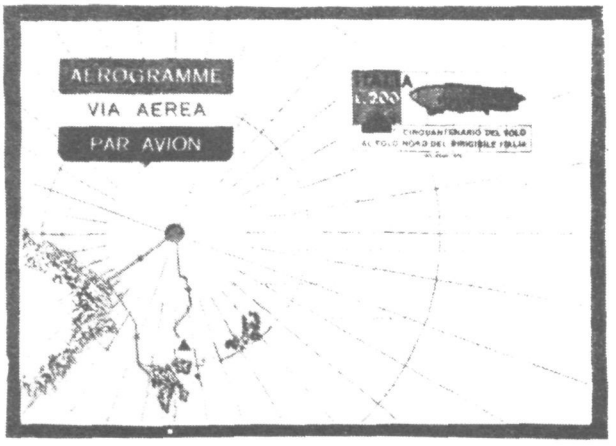
The Discovery was built for his 1901 voyage but was not available for his second, in 1912. On that one he reached the South Pole — although Norway's Roald Amundsen reached it first. Scott and his companions perished on their way back in one of the great sagas of polar exploration.

Both Scott voyages are commemorated in the Discovery's wardroom, which is preserved as it was on that first Antarctic trip. Tiny cabins off the wardroom, some in their original state, bear the names of their first occupants. Scott's bunk and settee now hold his snow goggles, knife, snow shoes and tea strainer.

What will happen to the poignant little museum if the Discovery is sold — or given away — "is something nobody knows yet," Pyke said.

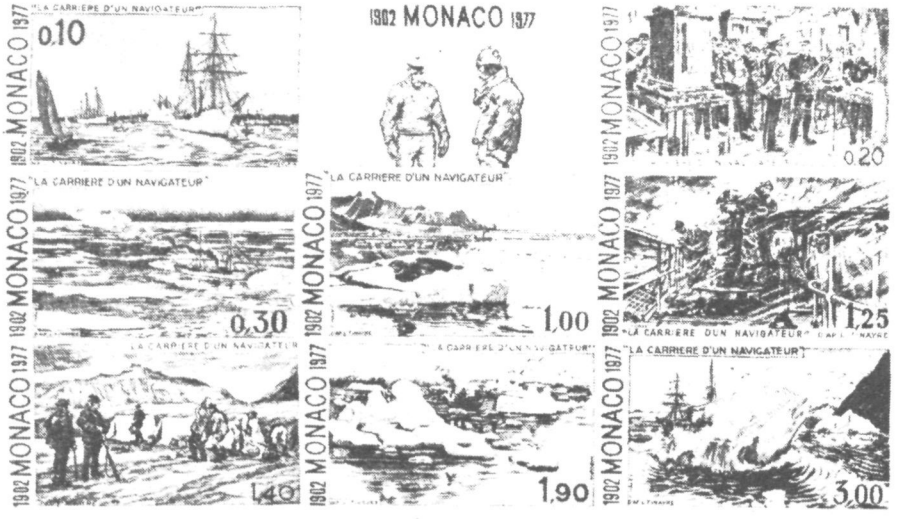
"But it would be only right to keep these things aboard," he said.

The largest living animal is the great blue or sulphur-bottom whale in the Arctic regions. It weighs as much as eight large elephants.



Italy issues aerogram

Italy marks the 50th anniversary of the polar expedition of the dirigible "Italia" with a 200-lira aerogram issued March 4, advises the Italian Administration of Posts and Telecommunications, The multicolor aerogram was printed in offset at the State Polygraphic Institute in Rome in two million copies.



Monaco's Arctic exploration

The second part of Monaco's 1977 stamp program, to be issued in November, calls for this portion of nine stamps devoted to the Arctic exploration of Prince Albert I aboard the oceanographic ship "Princess Alice II." Each value reflects a painting of Louis Tinayre who accompanied the prince on the voyage of 1898. The depictions and values are: "Princess Alice II in the Kiel roadstead, 10 centimes; the ship's laboratory, 20c; the ship in the icepack, 30c; Arctic dress equipment, 80c; polar passage, 1 franc; the ship's bridge in a snowstorm, 1.25fr; Arctic encampment, 1.40fr; the ship's steam dinghy among ice floes, 1.90fr; and the ship passing icebergs, 3fr. This series joins 17 other stamps announced for November release.

Wilkes Antarctic Expedition

By Lt. Thomas Davis
Linn's Stamp News

On Jan. 30, 1840, aboard the U.S. sloop-of-war Vincennes, Lt. Charles Wilkes, commanding the U.S. exploring expedition in Antarctic waters, made the following entry in his log:

"I make this bay in longitude 140°30'E, latitude 66°45'S, and now that all were convinced of its existence, I gave the land the name of the Antarctic Continent."

This historic moment, the realization that Antarctic lands comprised a continent and not merely a large group of islands, was a landmark in early polar exploration.

During the first 20 years of the 19th century, U.S. commercial interest grew in the area south of Cape Horn as sealers and ship owners became concerned that America was falling behind France and England in the race for fishing and sealing grounds and the establishment of new trade routes and bases in the area.

As early as 1821 business interests unsuccessfully applied pressure on Congress to appropriate funds for the outfitting of a naval exploring expedition into Antarctic waters.

The political winds of the time were unfavorable, however, and 15 years went by before an act was finally passed in 1836 authorizing a United States exploring expedition, the first scientific expedition ever fitted out by the U.S. government.

Another two years of preparation passed before the expedition finally set sail from Hampton Roads, Va., on Aug. 19, 1838.

Under the command of Lt. Charles Wilkes, USN, the expedition consisted of the sloops-of-war Vincennes and Peacock, the hermaphrodite brig-of-war Porpoise, two New York pilot boats to be used as tenders (Sea Gull and Flying Fish) and the supply ship Relief.

These six vessels were in poor repair and were unsuited for extended operations in polar climates. In addition, they carried improper food and

Capt. Charles Wilkes

clothing for such an expedition.

In three forays into Antarctic waters over an 11-month period, ships of the Wilkes Expedition (as it was popularly known) were able to visit the tip of the Antarctic Peninsula, penetrate the pack ice off Thurston Island to 70°S, and sight enough points along approximately 1,500 miles of Antarctic coastline to establish the existence of a continent.

The expedition was not without its price, however, and only three of the original ships returned from their voyage.

Sea Gull was lost sometime between May 8 and 19, 1839, and it is assumed that she foundered in poor weather; she took 15 officers and men down with her.

The Peacock struck a shoal in the Columbia River on the west coast of North America and was battered to pieces by heavy tides. Flying Fish was found unfit for further duty and was sold at Singapore.

The Relief pulled into Callao, Peru, at the end of her part of the Antarctic portion of the expedition. There she was refit and replenished.

The achievements of the Wilkes Expedition, considering the quality of its ships and equipment, were remarkable. Wilkes was promoted to the rank of commander and was awarded a gold medal by the London Geographical Society. To many Americans he was a national hero, the discoverer of a strange new world.

The expedition's exploits in the Antarctic have been perpetuated by the naming of Wilkes Land and Vincennes Bay there.

Wilkes spent 18 years editing the technical volumes of his expedition's scientists and trying to convince Congress to appropriate sufficient funds to publish them all.

A five-volume report, "Narration of the U.S. Exploring Expedition," was published in 1844, and Congress distributed a set to nearly every country of the world, including Prussia, Tuscany, the Kingdom of the Two Sicilies, New Grenada, the Sandwich Islands (Hawaii) and Texas.

When the Civil War broke out in 1861, Wilkes, now a 61-year-old naval captain, was recalled to active duty. It was Wilkes who nearly caused Great Britain to enter the war on the side of the Confederacy when, in command of the San Jacinto, he overhauled the British mail steamer Trent, fired two shots across her bow and removed two Confederate diplomats en route to London.

Wilkes' further actions during the Civil War were no less controversial, and he was eventually court-martialed and suspended from active service for three years.

President Lincoln reduced the sentence to one year, but Wilkes never returned to active service. In 1866 he was promoted to the rank of rear admiral on the retired list, and he spent the last 11 years of his life working on his unpublished Antarctic papers.

Nineteen volumes in all were eventually published, but Congress stopped the necessary funds after $350,000 had been expended, and many papers never were published.

Unfortunately, a large number of published volumes were destroyed in a warehouse fire and never reached the public.

Wilkes died shortly before his 80th birthday, embittered and resentful. He had made one of the most remarkable voyages in U.S. naval history and is still considered one of the pioneers of Antractic exploration.

In June 1977 the Gilbert Islands issued a set of four commemorative postage stamps to honor early explorers. One of the men so honored was Charles Wilkes, who appears on the 35-cent stamp with his ship Vincennes.

Unfortunately, the ship pictured on the stamp is not a faithful likeness of the Vincennes, whose hull was painted black and whose bow was entirely different from the one pictured.

The Vincennes was commissioned in 1826 as a "ship sloop second class, 18-guns."

After the Wilkes Expedition, she sailed with Commodore Ringgold's expedition to the North Pacific in 1853-56, saw considerable action in the Civil War and was sold at Boston on Oct. 5, 1867.

Greenland introduces program

The Greenland 1978 stamp program called for the issuance of a 1.20-krone stamp honoring the Scientific Research Commission on Jan. 20.

Two definitives — 1.20kr and 1.80kr — portraying Queen Margrethe will be issued April 17.

The 25th anniversary of the Danish Constitutional Law changes (end of Greenland as a Danish colony) will be marked with the introduction of a 1.50kr value June 5.

The program also calls for a stamp honoring the 250th anniversary of the founding of Godthab on Aug. 29 and a 6kr definitive in October.

BREAKING TRAIL—The U.S. Coast Guard icebreaker Burton Island is heading through the Beaufort Sea ice

The Coast Guard icebreaker to be decommissioned after 32 years

May 9

ALAMEDA-She is an old lady at only 32 years, with little chance that anyone would call her a "grand old lady."

The Burton Island was built at Western Pipe and Steel Co. in San Pedro and was delivered in 1946 to the Navy, which was in charge of icebreaking at that time.

She is one of seven "wind-class" icebreakers built and is 269 feet long. At maximum speed she can travel at 16 knots, powered by six Fairbanks-Morse 10-cylinder diesel engines.They turn two three-bladed propellers that measure 17 feet in diameter.

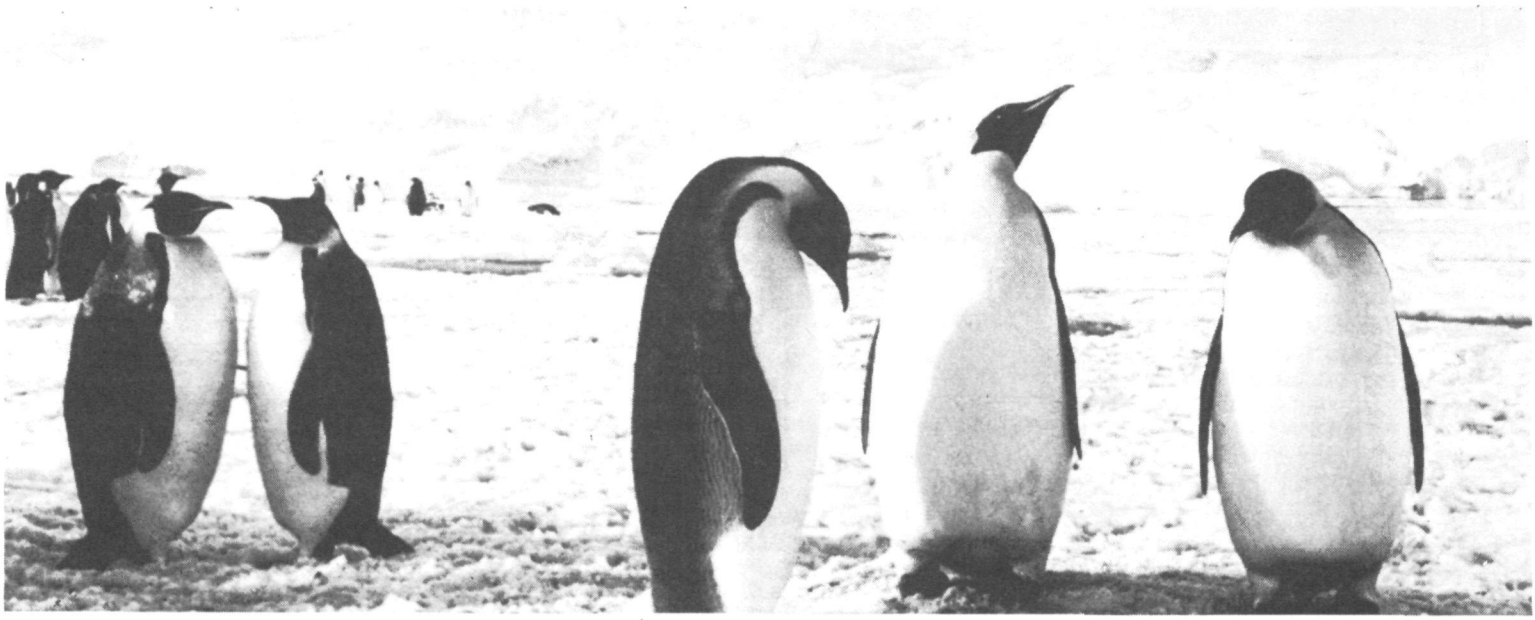
But the Coast Guard Cutter Burton Island, with 33,000 nautical miles of service during the past year alone, will bow out Tuesday with a decommissioning ceremony that will represent only a small measure of the pride felt in her by her people, 19 officers, 12 chiefs and 170 crewmen.

The Burton Island is an icebreaker. On such ships, the crew pits itself against the most stubborn and challenging forces of nature, the ice of the polar seas.

She develops 10,000 shaft-horsepower, only a sixth of the 60,000 horsepower of the newest icebreakers, such as the Polar Star.

Last summer she sailed north into the Arctic, the Chukchi and Beaufort seas, where she was a research platform for scientists studying the little-known waters above Alaska.

Then, as winter approached in the northern hemisphere, the Burton Island turned to the other end of the globe, to spend perhaps her last summer in antarctic waters—or rather ice.



EMPEROR'S COURTSHIP is viewed in two typical situations: couple standing motionless and face-to-face at left shows posture usual just after mate has been chosen; on right, choice is more complicated as two females vie for one male.