THE ANTARCTICAN SOCIETY

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HONORARY PRESIDENT — MRS. PAUL A. SIPLE

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Cajun Icebreaker - Greatest Boat Since the SANTA MARIA

United States' Newest Research Icebreaker for Antarctica

by

Dr. Laney Chouest

President, Edison Chouest
Offshore Galliano, Louisiana

on

Tuesday evening, 21 January 1992

8 PM

National Science Foundation
1800 G Street N.W.

Room 540

Dr. Laney Chouest, an intimidating giant of a man with a flair for the humorous, is The Man behind the new NATHANIEL B. PALMER. state-of-the-art polar research vessel which will soon be plying Antarctic waters. Laney, age 38, is a bona fide doctor who gave it up after four years of worrying about malpractice suits to take over the family operations — his father founded the company when Laney was seven — of Edison Chouest Offshore (ECO), where he now worries about deadlines and breach of contracts. The buck stops at Laney's desk, as he is responsible for all technical work done at ECO. He is totally involved in all phases, including vessel design, construction, testing and operations. Early on he recognized the need for scale in determining true dimensions, so he sired calibrated offsprings who invariably show up in his construction photos of the Cajun icebreaker. Come and see the new ship which we wrote about in our May 1991 Newsletter. It will be a fun and enlightening evening!

SMILE TIME. Just before Thanksgiving one of the environmental watchdogs of a prominent international organization, finding himself alone at their camp, took it upon himself to climb solo a prestigious Antarctic mountain. He got into trouble and had to be rescued by one of the polluting countries! What a touching holiday story!

We still have a few 1992 New Zealand Antarctic calendars. See page 2.

That never-ending three-month stressful holiday called Christmas is in our midst; my campaign to whip it all out has again fallen on deaf ears. We are going back to Maine, pray for snow and cold weather, put logs on the fire, watch the tide come in and go out, and hope that we can survive until it is all over. In an effort to improve our communication with you people who have news for us, we are putting fax machines in the Nerve Center and in my post-and-beam on the coast of Maine. Having a 96-year old mother and a 100-year old aunt living next door, my time is not always my own, so, hopefully, the fax machines will help to make things easier. 'Tis the season to be jolly — a real myth, don't you believe it — but, regardless, we are bound by the rules of the game to wish you all a Happy Holiday season. However, in reality what I really want for all of us is good health and a lot of fun in 1992. Life is very, very short, so go for quality times while we still have some of our faculties.

THE SHIP'S STORE - CALENDARS, POSTCARDS, NOTEPAPER. As this issue goes out, we have less than twenty 1992 New Zealand Antarctic calendars with fantastic pictures of Antarctica. However, unless Hedgehog House can get their act together and print readable dates on their calendars, we are not going to sell any more in future years. But if you want an excuse for a calendar with super pictures, our offer of $10 per calendar is still a bargain.

For the first time we are offering a package of the 1991 Hedgehog House Antarctic postcards, 5" x 7", twelve different scenes, all very beautiful. We are selling them for $7.50 per package. We think you will love them, as they are truly GREAT.

We are also selling 1991 Hedgehog House notepaper. There are only four in a package (Adelie penguins at water's edge on snow-covered Paulet Island, Gentoos nesting on Petermann Island at the southern end of the Lemaire Channel, King penguins, and Chinstrap penguins). The size, folded, is 6" x 4". They are classy, only for your best friends, too good for relatives. Price is $3.50 per set, and we don't make a nickel on them.

NEW SCIENCE LABORATORY AT MCMURDO DEDICATED TO ALBERT P. CRARY. There was only one logical choice when it came to dedicating the new science, engineering, and technology ceanter at McMurdo — it just had to be Bert Crary. He was everything — a hard-working, tireless field scientist whose expertise crossed many disciplines; he was an indefatigable researcher who actually published the results of his years and years of work in the field; and he became, in spite of himself, a top-notch administrator at the National Science Foundation. It got a bit scary when NSF never said whom they were going to honor when they dedicated the laboratory, and as months went by one wondered if they were going to screw it up.

The plaque at McMurdo says it's the "Albert P. Crary Science and Engineering Center," and it was so dedicated by Dr. Walter Massey, Director of the National Science Foundation on 4 November 1991. But we notice in the 3 November 1991 issue of THE ANTARCTICA SUN TIMES that they are referring to it as the Science, Engineering and Technology Center (SETC), and they show a logo with that name, and in the bull's eye a sketch of the center. The name "Crary" does not show at all. This writer thinks one of the great tragedies of this modern era is that everything has to have an acronym and SETC is a bummer. It is this soul's opinion that the facility should be called "The Crary Center", and leave it at that.

The plaque at The Crary Center reads as follows:

Albert P. Crary Science and Engineering Center
dedicated 4 November 1991
Albert P. Crary, 1911-1987

Pioneer in polar geophysics and glaciology, skilled and admired administrator of polar research expeditions, the first person to set foot on both poles. 1952-1955 - chief scientist for arctic ice island T-3. 1955 - established U.S. glaciology headquarters for the International Geophysical Year. 1957 - deputy leader of United States science during the International Geophysical Year and science leader at Little America, Antarctica. 1960-1968 - chief scientist, United States Antarctic Research Program. 1969-1976 - deputy, then director, Division of Environmental Sciences, National Science Foundation.

The National Science Foundation News of 18 November 1991 issued the following press release on the new Antarctic Research Laboratory:

> Antarctica's role in global change will be studied in a new $23 million research laboratory opened Tuesday [November 5, 1991] at McMurdo Station, the National Science Foundation (NSF) announced November 18, 1991. NSF, through its U.S. Antarctic Program, funds and manages scientific research at McMurdo, two other research stations, and at other remote sites in Antarctica.
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> "The new lab and its highly sophisticated scientific equipment will enable the Nation's scientists to do research procedures not formerly feasible in the Antarctic," said Walter E. Massey, director of NSF, during ceremonies at the site. "We will learn more about the ozone hole, its effect on antarctic life forms, and the role of ice sheets in global change, among other investigations to be conducted here," he told dignitaries, scientists, and construction workers assembled to dedicate the 46,500 square foot facility.
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> Dr. Massey was joined at the ceremony by Delia M. Newman, U.S. Ambassador to New Zealand. Also present were John A. Knauss, director, National Oceanic and Atmospheric Administration; and Dallas L. Peck, director, U.S. Geological Survey. E.U. Curtis Bohlen, who headed the U.S. delegation to the recently completed international negotiations for environmental protection of the Antarctic, represented the Department of State.
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> The laboratory contains specialized equipment that will extend science beyond field collections and observations that were typical of earlier work in the south polar region. Replacing structures at McMurdo that were built as early as 1959, it has a computer facility, environmental rooms, and five large areas in which to conduct experiments. Work on portions of the new facility will be completed in 1992 and 1993.
>
> Other research will involve geology and geophysics, weather studies, and ocean sciences as well as engineering and the application of new technologies to the operational support of science. Researchers selected from U.S. universities, Federal agencies, and firms will conduct the studies. Analysis of poorly identified waste materials that accumulated at the station during its early years is one of the first tasks for the lab.
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> Situated 800 miles from the South Pole, McMurdo is the largest research station in the Antarctic. It has the world's southernmost seaport, and it has landing areas for both wheeled and ski-equipped airplanes. The United States has used the site since 1956 as a hub for research projects throughout the Antarctic.
>
> "McMurdo is the undisputed gateway to the vast antarctic interior," said Massey.

The lab is named the Albert P. Crary Science and Engineering Center. Crary, who died in 1987, was a prominent geophysicist and glaciologist who was the first person to set foot on both the North and South poles.

I think our Society should have a lecture on Bert Crary, and no one in our ranks is more qualified than Charlie Bentley who sits in the Albert P. Crary Chair of Geophysics established at the University of Wisconsin. Charlie was Bert's closest colleague in this country, and knew him better than anyone. Whether it was by design or accident, Charlie happened to be at McMurdo when the scientific laboratory was dedicated to Bert. Mildred's first word of its' happening came in a phone call from Charlie at McMurdo, although she knew it was in the works because NSF had asked her for photos of Bert. A benevolent move by NSF would be to take Mildred and Frank, their son, to McMurdo so they could properly baptize the building in Bert's name by pouring some Budweiser or Old Methuselah over the portals.

ENVIRONMENTAL PROTOCOL. (State Department - courtesy of Ray Arnaudo) The United States and the twenty-five other Antarctic Treaty Consultative Parties concluded, by consensus, the Protocol on Environmental Protection to the Antarctic Treaty in Madrid on October 4, 1991. The Protocol was opened for signature in Madrid on that date and, thereafter, in Washington until October 3, 1992. Twenty-three of the Antarctic Treaty Consultative Parties, including the United States, signed on October 4, along with eight of the Contracting Parties that are not Consultative Parties (see below). The Protocol is the result of two years of negotiations and incorporates a comprehensive approach to environmental protection in Antarctica, including mineral resource activities.

The Protocol designates Antarctica as a natural reserve, devoted to peace and science, and incorporates an indefinite ban on mineral resource activities there. It specifically prohibits all activities relating to Antarctic mineral resources, except for scientific research, with the proviso that this prohibition cannot be reviewed for at least 50 years after entry into force. It also sets forth general legally binding obligations upon human activities in Antarctica to protect its environment and to accord priority to scientific research there. These require the prior assessment of impacts of activities undertaken in Antarctica, including non-governmental activities, and action to respond to environmental emergencies.

Detailed mandatory rules for environmental protection are incorporated in a system of annexes, forming an integral part of the Protocol. Five specific annexes have been adopted for ratification with the Protocol itself, setting forth strict requirements relating to procedures for environmental impact assessment; conservation of Antarctic fauna and flora; waste disposal and waste management; the prevention of marine pollution and area protection and management, respectively. Additional annexes may be added following entry into force of the Protocol.

The Protocol also establishes a Committee on Environmental Protection to provide advice and recommendations to the Antarctic Treaty Consultative Meetings. Finally, the Protocol incorporates a number of provisions to ensure effective compliance with its requirements, including compulsory and binding procedures for settlement of disputes over those relating to mineral resource activities, environmental impact assessment and response action, as well as over the detailed rules included in the annexes.

(The 23 Antarctic Treaty Consultative Parties signing the Protocol on October 4 were: Argentina, Australia, Belgium, Brazil, Chile, China, Ecuador, Finland, France, Germany. Italy, Netherlands, New Zealand, Norway, Peru, Poland, South Africa, Spain, Sweden, the Soviet Union, the United Kingdom, the United States and Uruguay; the 8 Non-Consultative Parties were: Austria, Canada, Colombia, Greece, Hungary, Democratic People's Republic of Korea, Romania, Switzerland.)

SIXTEENTH ANTARCTIC CONSULTATIVE MEETING (ATCM XVI). (State Department - courtesy of Ray Arnaudo). ATCM XVI was held in Bonn, October 7-18, directly following the signing of the Environmental Protocol in Madrid. Treaty parties hailed the conclusion of the Protocol as a demonstration of the Treaty system's ability to respond to new problems and all parties agreed to move quickly to implement it.

The Meeting approved a fifth Annex to the Environment Protocol which extends and strengthens the existing system of protected areas. Parties also agreed to meet on the issue of tourist and non-governmental activities before the next ATCM (ATCM XVII). In all, thirteen recommendations were passed. However, no agreement was reached on the creation of a secretariat for the Antarctic Treaty. It was agreed to meet annually, rather than biennially, and Italy offered to host ATCM XVII in November, 1992 in Venice.

TENTH MEETING OF THE COMMISSION ON THE CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES (State Department - Courtesy of Ray Arnaudo). The tenth annual meeting of the Commission on the Conservation of Antarctic Marine Living Resources (CCAMLR) was held in Hobart, October 18 - November 1. Parties agreed upon a cap on the krill fishery which we have been seeking for several years: 1.5 million metric tons (mt) in the major fishing area (area 48), with more restrictions to be specified if the catch should ever exceed the highest historic catch of 620,000 mt. We also passed two new conservation measures to limit incidental take of birds in the trawl and longline fisheries, as well as one requiring countries to notify CCAMLR before beginning new fisheries. The total harvest of krill was about 350,000 metric tons in 1991, a decline of about 5 percent from the previous year. The harvest of finfish increased to almost 100,000 mt, due to an increase in the catch of Myctophids, small fish used in fishmeal production.

IF I WERE AN ICEBERG .... The ultimate iceberg will be the one that will carry Scott, Wilson and Bowers to their watery grave, but in all likelihood it will be cloaked in total secrecy as no one will know precisely where, when, or how it will come about. But there seems to be a lot of information on A-24 which broke off as a 70-mile by 50-mile berg back in 1986, and still lives a somewhat enchanted life in the South Atlantic between the southern tip of South America and South Georgia. Right now it is only 55 miles long by 35 miles wide, weighs approximately 100 billion tons, and is still large enough to be its own weather maker and scare away ships. The lower temperature of A-24 in contrast to the less cold water in which it is now located creates a lot of fog and mist, so it is shrouded in nasty weather much of the time.

A-24 packs a little bit of Antarctic history, as Robert Headland, curator of the Scott Polar Research Institute in Cambridge, says that Bunny Fuchs's old base, Shackleton, is on it. And if Shackleton is on it, perhaps the old American base, Ellsworth, is on it, too. The two stations were only fifty miles apart. The U.S. operated Ellsworth in 1957 and 1958, then turned it over to the Argentines who operated it through 1962. For those who wintered over at Ellsworth in 1957, it was a hair-raising experience as the camp had a succession of personnel problems throughout the year. The head carpenter who built Shackleton was the late Ralph Lenton, who was a member of our Society for many, many years. When Ralph built the station, it stood 195 feet above sea level. The shelf was 1,300 feet thick, and was floating on 3,000 feet of water. Even at the time it was built, Fuchs was apprehensive that the shelf might calve off and send it to sea (see page 33 of Fuchs's THE CROSSING OF ANTARCTICA), but it held on for thirty years. Presumably the iceberg could survive until March 1992.

Besides Shackleton Station, and possibly Ellsworth, the iceberg has a bunch of hitch-hiking penguins. Presumably they are Adelies, and when the berg melts, they might swim over to the Falklands. Won't they be shocked when they meet up with those dirty, raucous, bad-smelling, hopping Rockhoppers. They will think for sure that pollution has reached Antarctica!

BLUE ICE RUNWAY AT MCMURDO LOOKING GOOD. Malcolm Mellor died much too soon, because if he had lived one more year, he would have seen NSF upgrade their snow and ice equipment from a Swiss Army knife to a laser grader and a snow blaster which seem to have revolutionized the preparation of blue ice runways for landing sites for large aircraft. There is a new laboratory at McMurdo in the Crary Center, called the Snow and Ice Mechanics Laboratory. The Cold Regions Research Engineering Laboratory (CRREL) at Hanover runs it from the engineering standpoint, so it is sort of CRREL South. George Blaisdell of CRREL is the chief hancho on the project, and Peter Wilkniss thinks he is the greatest thing since pistachio icecream. So CRREL has some staff at McMurdo, an office, access to the computer, and use of some of the environmental chambers.

The laser grader, which is ordinarily used for grading roads, is evidently working miracles with ice. It's an external laser separated from the blade by several hundred feet, and Peter told us it is so powerful that it goes through ice like butter. It works in bands, and does a thousand-foot section at a time. Then the snow blaster takes chunks of ice and eats them up like crazy, chewing them and spitting the stuff away.

There are a couple of snow and ice specialists running the equipment, and NSF has assigned Dwight Fisher, a former VXE-6 pilot who has an engineering degree, as the NSF manager overseeing the whole project. One of the current problems is obliterating the large blisters of considerable size - some larger than a medicine ball - so that a 180,000-pound plane like a loaded C-141 can land on the ice runway. Right now such a landing is contemplated for some time in February.

IT WAS BOUND TO HAPPEN SOMETIME. The first LC-130 Here to land at the South Pole this austral summer had, sic, an all-female crew. Just what is this Antarctic world coming to? First, an all-female wintering-over camp at one of the German stations, now an all-woman flight crew. My eyesight must be failing, or else they are making women differently lately, because I looked at a picture of the crew and thought they were all men! Antarctica is the most unisexual continent on earth, after having been the most masculine. If you just wait long enough, everything comes around, like with the width of men's neckties.

The aircraft commander was Lt. Rhonda Buckner, who is on her fourth and final season of flying on the ice. Lt. Patricia Turney was co-pilot, and the other members of the crew were Susan Wells, Tami Tudor, Jane Alstott, Nancy Kelson, and Tammy Trefts. When I think of what a typical VXE-6 pilot should look like, I can't help but hark back to the days of the swashbuckling Harvey Speed with a crew cut, talking brashly around a cigar firmly locked in his jaw. Probably not one of Buckner's crew was even born when Harvey was flying Gus Shinn's old QUE SERA SERA! The torch has been passed on, and may it continue to burn brightly, no matter who is in control.

MOUNT VAUGHAN ANTARCTIC EXPEDITION. There is only one way you could get rid of Norman Vaughan, ageless dogteam driver from the Byrd Antarctic Expedition, 1928-30, and that would be to shoot him. When he married that young southern belle from Atlanta a few years ago, I started to compose his obituary in my mind, as I thought she would be the undoing of the old coot. But Carolyn has been the elixir of life for old Norman, and he's acting like a young pup. I don't want to see Carolyn for fear she will look like a worn-out, exhausted old gal.

Now Norman is getting fired up to assault Mt. Vaughan (10,320 ft.) in Antarctica in 1993 when he will be 88 years old (see page 136 of the November issue of the National Geographic). He is lining up backers, one of whom is Land's End in Dodgeville, Wisconsin. Evidently they can't afford the cost of a typical centerfold, so Norman's is their poor man's centerfold advertising their Squall jacket. Their December cata-

logue will be mailed to 12 million people, so Norman will end up in a lot or women s bedrooms this winter, presuming that women take Land's End catalogues to bed with them while errant husbands watch pro-football on TV.

Norman has several major obstacles confronting him. Besides money, there is the problem of how to circumvent the newly initiated protocol barring dogs from Antarctica, as Norman wants to go back to the Bay of Whales and dog sledge it all the way to Mt. Vaughan. Someone at NSF told Norman over the phone, "If you want to do it, do it." That's all the encouragement Norman needed, and he's full throttle right now. Perhaps Norman can make the dogs look like penguins. And if Ice Cops do apprehend him, what are they going to do anyway with an 88-year old renegade and his dogs? You can't shoot dogs, as the world is full of dog lovers. That leaves Norman, and capital punishment seems too severe for a man who has only gone to the dogs. Probably they would slap his wrist by castrating him and sending him home, but at age 88, would that matter?

Norman will be in the Iditarod again this winter, but this time he will know where he is, as Trimble Company presented Norman with a global positioning system which will tell him within two feet of where he is at all times. That should be known as the Mother-in-Law Detection System. Incidentally, if Norman pulls off this Mount Vaughan Expedition — and he has been successful doing equally crazy things in his life, as this past summer he was part of a group which excavated a B-17 bomber from 250 feet below the snow surface in Greenland — he will be not only the first American to drive dogs in Antarctica, but the very last, too. Norman, just what are you drinking up there in Alaska? Bottle it, market it, the world will buy it!

ELIOT PORTER, MOVE OVER - HERE COMES STUART KLIPPER. When it comes to panoramas of the Antarctic, Stuart Klipper of Minneapolis is in a class by himself. When it comes to wardrobe, Stuart is in a class by himself, too, as he wouldn't come up to Goodwill standards. But put a Linhof Technorama camera with a Schneider 90-millimeter Super Angulen lens in his hands, turn him loose in some beautiful scenery and he's devastating. The camera covers a 105-degree angle of view, and he ends up with the most beautiful colored prints you ever saw - 38 inches by 12 inches. He had sent me proof sheets of his photos which were in his exhibit last winter at the Museum of Modern Art in New York City, and one in particular of many tabular icebergs caught my fancy. I called up Stuart and asked him how much, and he came back - $500. I thought Rocky Marciano had hit me!

Then we got to talking about BEARING SOUTH, a portfolio book (10 3/4" x 13 1/2") with twenty-eight Klippers. That's a great bargain - only $850! I asked him if he really sold those things, to which he replied that fifty copies were put together, but only forty were being offered to the public. It seems that the largest libraries buy, including the Mormon Library in Salt Lake City. Stuart feels his portfolio being in their library is like having religious insurance, that he is going to benefit from divine guidance and protection while in the field, while also assuring him the right aperture opening and shutter speed. One has to protect one's flanks at all times. BEARING SOUTH has many panoramas from a yachting trip which he took to the Peninsula back in 1987. Edna's Breastworks (family version) in the Lemaire Channel is in one panorama! I was so anxious to see the book that Ruth and I went to the Library of Congress, but, alas, it was the day after Thanksgiving, and no one was home.

Stuart is fifty years old, was born in the Bronx, but for the last twenty-five years the world has been his address. He has been everywhere worth going, and a few places not worth going to (in the low latitudes). The first of next year he will be in Antarctica for the third time, going to the Dry Valleys. When he gets on the ice and puts on a parka, his appearance must change for the better by about 100 percent. Stuart is a nice guy, he is a fantastic photographer, and we wish we could get a [Clipper without an arm and a leg. Oh well, there's always the lottery.

DATES FOR OPENING OF "ANTARCTICA" AT IMAX THEATERS. As we go to press, the new film ANTARCTICA was being shown at the Air and Space Museum in Washington, B.C., and at the Museum of Science and Industry (57th and Lake Shore Drive) in Chicago. By the time this Newsletter reaches its destinations, it will have opened on 8 December in the Omnimax Theatre in Vancouver, B.C., and at some place called Dreamland in Australia. Other cities which will be showing ANTARCTICA, along with their opening dates, are:

Norwalk	18 January 1992
San Diego	3 February 1992
Denver	13 March 1992
Edmonton	1 April 1992
Los Angeles	23 June 1992
Richmond,VA	1 August 1992
Jersey City	1 October 1992

SOVETSKIY SOYUZ (by Brooks Conrad). The trip on the SOVETSKIY SOYUZ grows larger and larger as I think back on it and collect all the gems that came our way .... what a group (they'd been EVERYWHERE) .... what an itinerary .... what planning .... what execution! Wunderbar! However, we got off to a shaky start. Our first day on board (out of Provideniya), not yet in the Bering Strait, was the start of the military coup. For about two days, we didn't know but that Moscow might scrub the whole venture .... or, the Soviet crew might defect as a unit to Alaska. Either way, we'd been dead, scrubbed. When the coup imploded, the Soviet crew threw a post-coup party for all.... and the chief engineer sold his communist party card/financial record to one of the group who offered him $100.

We were 73 expeditioneers from 14 nations. The Soviet crew was genuinely happy to see us on board and to show off their magnificent vessel. We had an open bridge 24 hours a day. The chief engineer personally conducted tours to the nuclear control room and to the reactor room, both of which we photographed at will. Where the bow plates meet on the SOYUZ, each side is two meters of steel. It was really 'something' to see that baby ice-snouting through new ice 3 to 4 feet thick at better than 10 knots (this through Vilkitski Strait past Cape Chelyuskin, the top of Asia)...or, at other times, through multi-year ice eight feet thick, at 6 knots.

For landings we had four zodiacs and two helicopters...the Soviet pilots were flawless on/off the ravioli-sized chopper pad. The scenery was varied...from desolate to majestic, but all impressive. The weather had the same range. At the start on the eastern end, we had beaucoup sun and temps of 65-70F, Provideniya to Wrangel. Later, the temps never got below about 30F...but the wind chill factor brought them down to perhaps 12-15F.

We saw our share of wildlife...but especially those magnificent Lords of the North, the polar bears. What a succession of them we had the privilege to see! What wonderful creatures... the poise, the grace and confident bearing. How beautifully the females mothered their cubs. We saw one mother with two cubs...the second had fallen a bit behind and, in playing 'catch up', he put on an aquatic show from floe to floe that would have warmed the heart of an Olympic diving coach. He had everyone on board at the rail, shouting to one another, between pix, "that's a 10, for sure!"

We had a surprise dividend. Toward the end, we digressed from the Northern Sea Route and nuked on up to Franz Josef Land...a very hard place to get to, of course. The scenery was awesome (a la Antarctic in many respects), majestic. Full ice caps on many islands of Franz Josef...and 'plain old glaciers' galore. The panoramas reminded me much of Svalbard and Greenland. We checked out an abandoned Soviet base. Earlier we had visited several working bases. One of our landings in Franz Josef was at Cape

Norway on Jackson Island, where the Norwegian Nansen wintered over after leaving the FRAM on foot in an aborted effort to reach the pole. It was out of here that we made our farthest north penetration, to 81-12 North. From this point we sailed across the Barents Sea to Norway's Nordkap, then retraced to terminate at Murmansk.

POLAR QUARTERMASTER (by Jack Sawicki). Waterfowl down has been the preferred insulation for Antarcticans since 1956, when Eddie Bauer down parkas and trousers were provided for those wintering at the South Pole. Since the 1950s several generations of down garments have been issued to NSF personnel. The current NSF clothing issue includes an excellent parka containing approximately one pound of waterfowl down manufactured in Canada under the Metro Snow Goose label.

Quality down (i.e., with a "fill power of 600 in3/oz), quilted between tightly woven fabrics, is the most efficient natural insulator by weight. Unlike furs and woolens, down gear is also easily and compactly stored due to its compressability and recovery characteristics. Quality down is quite expensive, and most garments constructed with it are too delicate to be machine washed and dried. Down readily adsorbs moisture from perspiration and external sources and is nearly impossible to dry in the field. This is a significant problem, especially in survival situations.

Because of these drawbacks, the Army and others have been searching for a down substitute since World War II. In the 1960s, nonwoven batts of 6 denier (25 micron diameter) polyester staple fibers were introduced as DuPont Dacron, and rapidly accepted for use in sleeping bags and clothing. While these materials were washable, much cheaper and more water resistant than down, the warmth/weight ratio and service life of these fiberfills was much lower. Over the next 20 years, fiber manufacturers continued research. 5.5 denier hollow staple polyester fibers were introduced in 1973 as DuPont Hollofil, increasing the warmth/weight ratio slightly and soon becoming the standard for military and civilian cold weather clothing. In the same period, a continuous fila ment fiberfill, Celanese Polarguard, was introduced, that was soon adapted by the Army for sleeping bags due to its greater durability. Silicone treatment of both of these fibers increased water repellency and compressability. However, neither could compete with down for light weight and warmth.

In 1978, the first insulation mixing smaller diameter (1-10 micron) microfibers with larger diameter fibers, 3M Thinsulate, was introduced. The addition of microfibers increased the thickness/warmth ratio of the product, reducing bulk, and became very popular in clothing for street- and ski-wear. However, down's far superior warmth/ weight characteristics still made it standard for extreme cold weather clothing.

In 1985, DuPont introduced the next improvement in synthetic insulation, Thermoloft. This mixture of 5.5 denier and smaller staple polyester fibers challenged down as insulation, nearly equaling its performance in clothing. For this reason, Thermoloft was utilized in the first generation of experimental clothing Arthur D. Little (ADL) produced with ITT Antarctic Services for the NSF in 1988.

In the 1980s, Albany International (formerly Fabric Research Lab) performed a research program for the Army that described on a microscopic level what down was- and determined why it was so warm. Basically, down was a mixture of microfibers of a diameter that most effectively blocked radiant heat loss, and macrofibers that, like polyester batts, reduced convective heat loss. Albany worked to develop a mixture of synthetic fibers that copied these characteristics, introducing it in 1990 as Primaloft. Primaloft was used in the second generation of experimental clothing ADL produced for the NSF in 1990. A competing product using the same principles, 3M Liteloft, was introduced soon after. Both products have a superior warmth/weight ratio than down, although Albany claims Primaloft has superior water resistance due to its silicone finish Primaloft is commercially available in clothing from L.L. Bean and Climb High, and Liteloft is available in sleeping bags from L.L. Bean and Sierra Designs.

SICK BAY REPORT - GENTLEMAN JIM, PETER ANDERSON, MORT TURNER, AL FOWLER, FRED MILAN. Gentleman Jim Zumberge appears to be making a fine comeback from all those radiation treatments on his brain tumor last August-September. We talked to him the day before Thanksgiving, and he sounded like his old self, although he admitted that he was weaker on one side than on the other. Knowing that at one time he was a physical fitness nut, we asked him if he was able to get out and go walking, and swimming, and he replied that he was doing both. He sounded very optimistic about the future, and, naturally, we all hope and pray that his optimism will prove with time to be well-founded. Jim is such a nice guy that we can't afford to lose him.

There are conflicting reports on Peter Anderson. Bill Zinsmeister, the fossil finder of note, wrote on 9 November that he had recently visited Peter and that he was "making excellent progress - he could talk quite well and was gaining mobility on his right side. It is quite apparent that he was on the road to recovery. He mentioned that he had enjoyed the cards, letters, and visits, and would appreciate more." But we talked to Peter on the first of December, and he sounded like a real disheartened man. He moved in with his daughter the day before Thanksgiving, but is confined to a wheelchair, and, by his own admission, never expects to leave the wheelchair. Whatever therapy he was receiving is now passe", and he sounded down in the dumps. Hang in there, Pete!

Mort Turner challenged a kidney stone, or the kidney stone challenged Mort last summer, and he almost came out second best. He was on the third day into a summer field season when the stone broke loose and got stuck. So a small local hospital loaded Mort up with morphine and Joanne drove the body back to Boulder. Things would have been pretty good except for a bacterial infection "that nearly did him in." In early November Joanne wrote that it was "not all over yet," but that Mort was finally back working again

Another hospital victim was Al Fowler, the old icebreaker captain and former deputy to the head shed in the Division of Polar Programs at NSF. He was operated on 25 November in George Washington University Hospital for a benign tumor which was attached to the pituitary gland. So that shot the devil out of Al playing golf on Thanksgiving Day, although they did send him home from the hospital the following day. He apparently is doing quite well, and anticipates that he will be able to go back to work later in December. If they took a slice out of that tumor, does that mean that Al will lose his slice on the golf course, or will he just end up with a worse hook?

We feel real sorry for our old friend, Fred Milan, who was physiologist at Little America V in 1957. Old Muckluck, as he was affectionately called, was really bipolar, and probably knows more about the rectal temperatures of Eskimos than any man alive. He served with distinction as head of the U.S. Committee on Circumpolar People. Fred has suffered a series of strokes over the past couple of years, and he told me last year over the phone, "Redbeard, know what I really miss most of all? It's my afternoon cocktail. The doctors have taken alcohol away from me, and I sure miss that cocktail."

BERGY BITS. We had a letter in late November from Grover Murray, telling us that in mid-October he and his wife had visited Larry Gould (Dr. Laurence M. Gould, 9451 E. Rosewood Ave., Tucson, AZ 85710), and found him "to be in better health than he was a year ago." Grover said that Larry "is still up and about, although he is a little forgetful at times." Grover went on to say, "Our visits appear to be stimulating, especially when we talk about Antarctica. If there is one message I could ask you to give members of the Society, it would be for those who have known Larry to write him from time to time." .... Polar philatelist Peter Barretta, who has been a mainstay of our Society here in Washington for years, has been having all kinds of health problems the past year, none of them good. Pete comes from Meadville, PA, hometown of Ruth Siple, but Pete led an exciting life. The Barretta family was involved in peddling booze back during prohibition, and Pete actually rode shotgun on the back of the wagon. What other newsletters have such great stuff?