THE ANTARCTICAN SOCIETY

905 NORTH JACKSONVILLE STREET
ARLINGTON, VIRGINIA 22205

HONORARY PRESIDENT — MRS. PAUL A. SIPLE

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Come hear our last lecture of the 1991-92 season!

Probing the Ionosphere from Antarctica, or, Not All Rain Makes You Wet

by

Dr. Theodore J. Rosenberg
Institute for Physical Science and Technology
University of Maryland

on

Tuesday evening, 28 April 1991

8 PM

National Science Foundation
1800 G Street N.W.

Room 540

Dr. Ted Rosenberg, he of Rosenberg Glacier (75°44'S, 132°33'W), is a member of the Advisory Committee of the Division of Polar Programs, National Science Foundation, as well as a seated member of the Polar Research Board, National Research Council. His research interests encompass ionosphere-magnetosphere physics and emphasize the study of energetic electron precipitation, auroral x-rays, cosmic radio noise absorption, magnetic storms and substorms, and wave particle interactions at ULF and VLF frequencies. There's nothing like a nice spring evening in downtown Washington, DC. Take advantage of it and of this outstanding speaker. Be there!

This Newsletter was made possible through the good cooperation of Guy Guthridge and Bernie Lettau at NSF; Ron Naveen of Oceanites John Splettstoesser, Chairman of the International Association of Tour Operators; Dr. Josep Portell, son-in-law of the late Ambassador Paul Clement Daniels; Capt. Brian Shoemaker, USN (Ret): Garry McKenzie of Ohio State University; Bill Sladen of Airlie; Chet Langway of SUNY-Buffalo; and Charles Swithinbank, UK. We thank you all, and count our blessings that there is Ruth Siple to put it all together so it looks nice. And God bless whoever came up with fax machines!

Before Dr. Rosenberg speaks, we will have our annual five-minute business meeting!

The lecture announced herein is our last for the current season, although we may put out another Newsletter in midsummer. Ruth had a close call last month, when she decided to go to church and pray for us sinners. But she should have been more worried about Sunday morning drivers, as one plowed into her and totalled her car — she was stopped behind another car, waiting for the red light to change. Fortunately there was no damage to the chassis of Ruth, and she remains her indomitable high-spirited self. The moral to this story is that if any of you actually feel in need of a little religion, just turn on your television and listen to preachers like Dick Vitale and Jim Valvano.

Happy Easter!

MARK EICHENBERGER SWEPT TO SEA. A former seaman on the HERO, Mark Eichenberger, lost his life in a most unlikely way for him, as this still relatively young man, 38, truly a Man of the Sea, got swept overboard by tumultuous waves when he was trying to cast off the mooring lines and get his ship, the EREBUS, away from the docks in a vicious midsummer storm. This all occurred in the harbor of Punta Arenas at the southern tip of Chile on 21 December 1991. Mark had just completed a rough trip northward across the Drake Passage after having been to Palmer Station where the EREBUS, under charter to the National Science Foundation, had carried supplies, scientists, and support personnel.

Mark was the son of American missionaries, and spent most of his childhood in Peru, most of his adulthood either at sea or in South America. Although he worked for NSF contractors in the Peninsula area for years, he will no doubt be remembered by most people for being one of four who rowed a specially-built aluminum rowboat, the SEA TOMATO, from South America to Antarctica a few years ago.

John Splettstoesser was holed up in a hotel in downtown Punta Arenas during this freak midsummer storm which also cost the lives of two other seamen, and raised havoc with small boats in the harbor, washing many of them ashore. John knew of the tragedy, but had no idea until several weeks later that one of the victims was Mark. To the best of our knowledge, his body has never been found. Our efforts to contact his parents in Huntington Beach, California, have been unsuccessful.

If there is any consolation in a life being snuffed out in its prime, perhaps it is that he gave his life on his own playing field, one that he knew intimately and loved, fighting the elements which hitherto had never stopped him. Most of us won't be that fortunate in our last scenario.

ANTARCTICA GETS MULTIMILLION DOLLAR CLEANUP (NSF Media Advisory, 17 March 1992). An unprecedented $30 million cleanup operation to remove debris accumulated over decades by man's exploration and incursions to this remote continent has reached a mid-point with this season's hi-tech collection and removal of almost 6 million pounds of refuse from Antarctica by the National Science Foundation (NSF). From the discards of turn-of-the-century explorers to those of today's scientists, the NSF focus is on creation of a "pack-in, pack-out" management system for most waste generated by U.S. Antarctic activities.

This season's cleanup effort centered on McMurdo Station, which, in addition to its own population of 1,200, receives waste generated by the 140-person U.S. research station at the geographic South Pole, as well as about 60 science projects at other locations. This season, officials estimate about 6 million pounds of refuse accumulated over decades and including one and a half million pounds of metal, as well as asbestos, PCBs, and barrels of human waste—have been sorted, labeled and containerized for removal and return to the United States.

Looking to the future, the NSF program also calls for reducing the amount of material shipped in, and for expanding the existing recycling program. A more efficient incinerator is being installed. The purpose of this unprecedented, 5-year, $30 million effort is "to protect the vital research underway and to preserve the fragile environment of this unique continent."

In addition to cleaning up the dump, NSF has:

- Developed a waste-sorting system in residential areas and at work centers which process 85 percent of McMurdo's domestic waste including cardboard, wood, glass, aluminum, other metals, batteries, and food-contaminated waste.
- Banned all open burning. A temporary incinerator that began operation in April 1991 is being replaced by a new commercially-built one.
- Processed and removed from the continent as hazardous waste 14 transformers filled with oil that possibly contained PCBs; developed plans to remove another 13 transformers that do not contain PCBs.
- Installed maceration and dilution equipment for handling sewage and relocated a sewage runoff pipe 17 feet below low tide level.
- Detonated 76 pounds of outdated, unstable laboratory chemicals and more than 3,000 pounds of obsolete explosives at a remote site on the Ross Ice Shelf. The site is located three miles from the nearest inhabited area and ten miles from the sea, where the nearest wildlife is found.
- Crushed and removed from the continent 36 containers of clean metal waste. Each container holds 2,560 cubic feet of debris.
- Begun operating a "tub grinder" in January 1992 to process construction waste.
- Removed from the continent 1,500, 55-gallon drums of contaminated fuel, organic solvents, acids/bases.
- Completed removal of asbestos from a storage building formerly used as a seawater distillation plant.

NSF DEFIES SUPERSTITION, LAUNCHES NEW ICEBREAKING RESEARCH VESSEL ON FRIDAY THE 13TH. Officials from the National Science Foundation (NSF) and Antarctic Support Associates (ASA), and executives from the Louisiana-based Edison Chouest Offshore (ECO) corporation met on March 13th in Port Fourchon, Louisiana, to dedicate the nation's first commercial icebreaking research vessel. Former Louisiana Congresswoman Lindy Boggs christened the ship at the dockside dedication ceremony.

Christened the NATHANIEL B. PALMER, the ship, according to NSF Director Walter E. Massey, "is a floating research laboratory for NSF-supported scientists in Antarctica." It has more than 6,000 square feet of research space, including laboratories and specialized computer and electronics facilities required to conduct Antarctic research. The vessel also has state-of-the-art acoustical systems, including equipment for seismic recording, bathymetry, and precise navigation. Scientists using the ship will be

able to perform multi-purpose oceanographic, geological, and geophysical research.

In addition to its research function, Massey said the ship will transport scientists, their research equipment and supplies into and out of ice-laden Antarctic waters. Up to 37 scientists can be berthed onboard the ship for up to three months. The ship is equally capable of breaking through 3-foot thick ice and of navigating through 16-foot waves in rough, open seas.

The 308-foot vessel's maiden voyage will transport U.S. scientists to and from a research station located on a mile-long ice floe in Antarctica's Weddell Sea. The scientists are part of a U.S.-Russian team gathering data on global climate and ocean currents in order to understand the effects of global warming.

(Ed. Note. Launching the ship on Friday the 13th would have no doubt met with Nathaniel B. Palmer's personal approval, as an article about Palmer quoted one of his officers saying, "Captain Palmer had no superstition as to Friday being a bad day to sail.")

ICE CAMP NEWS AS OF 27 MARCH (Bernie Lettau). The joint U.S.-Russian Ice Camp project in the Weddell Sea has just completed the first third of the scheduled drift. Between March 9 and March 22, a series of Twin Otter flights from Punta Arenas via King George Island exchanged six scientists, brought in some much-needed equipment and took out water samples for further analysis at home.

On March 23, the ice station crossed 70°S, drifting northward fairly precisely (at least for the last two weeks) at 53°40'W, at average speed of just under 7 km/day. The camp ice floe rotates very little; typically one to two degrees per day, with an accumulated rotation of less than fifteen degrees since the camp was occupied. Temperatures at noon have characteristically ranged between -20° and -25°C, with the nighttime minimum about five degrees colder.

Early scientific results include the first observations that the mixed layer is much deeper than the usual 300 meters in the central and eastern Weddell Sea. Thicknesses up to 700 meters have been measured. The separate ice shelves of the southwestern Weddell Sea appear to produce individual streams of high density water with differing characteristics, which ultimately mix to form Antarctic Bottom Water. The upper ocean shows a step-like structure with sharp discontinuities separating meter-thick homogeneous (with respect to temperature and salinity) layers. Seals are occasional visitors to the holes that have been cut through the ice.

RON NAVEEN'S MARCH 23RD PERSONAL REPORT FROM THE FUNNY FARM. I'm just back from a five-week stint on the Antarctic Peninsula, directed at interviewing Capt. Pieter Lenie, icemaster on the ILLIRIA, for a forthcoming issue of The Antarctic Century Newsletter. Lenie is alive, he is well, and he remains his usual cranky self, all the time bemoaning that NSF took away HIS ship, the HERO.

It was a good year for krill abundance, meaning lots of whales and lots of penguin chicks. From their study site at Lenie Station, Admiralty Bay, Wayne Trivelpiece and Doug Wallace report good breeding seasons for the resident Chinstraps and Gentoos, and for Adelies in particular. From Torgersen Island, Mark Chappell reports more than 8,000 breeding pairs of Adelies. And from both sites, good breeding success for South Polar Skuas. Robin Ross reports that her krill work is proceeding nicely at Palmer.

What's not so sanguine, however, is the tourism situation, with my concerns running in a number of directions, and mostly focused on people management. Although we must await a final accounting, it appears that

between 4,000 and 5,000 tourists visited the Peninsula this past season. The Society Expeditions ships, the EXPLORER and the WORLD DISCOVERER were basically full, but mostly because of the company's failure to take delivery on its new vessel, the ADVENTURER. In early March, Society went belly up, the WORLD DISCOVERER going on long-term lease to Clipper Cruise Lines (St. Louis), the EXPLORER to be sold outright to Abercrombie & Kent (Oak Brook, IL). Contacts on both these ships report a good season managing passengers. Same for the ILLIRIA, on which I spent some time, save for one adventurous parasailor and, after I left the ship (and according to sources), a rowdy group of French and Japanese passengers who kept ignoring the penguins' personal space. The FRONTIER SPIRIT rarely carried a full load, and rumors abound that its owners/operators will soon be changing her M.O. to more of a love boat-casino operation.

The large behemoth, OCEAN PRINCESS, again was jammed this season, 300+ passengers per trip, enjoying the shopping mall-casino atmosphere. Another huge vessel, the COLUMBUS CARAVELLE, made its Antarctic debut, mostly with German passengers. In contrast to the EXPLORER, WORLD DISCOVERER, and ILLIRIA, which are primed for 90-120 passenger groups, these larger vessels carry three times the passenger load and, potentially, three times the impact — but, at much cheaper, per-cabin costs. And while the smaller vessels offer the potential of 12-14 landings on a typical Peninsula trip, the larger vessels are lucky if they make six landings a trip. Some of us thought that the point of Antarctic tourism was maximum intimacy with the Antarctic environment; the new ships are proving that low cost still beats a plethora of shore time.

No doubt, the Treaty Parties will revisit the tourism issue at their November 1992 meeting in Venice, Italy. However, sparks undoubtedly will fly well before then. On April 21-23 in Colmar, France, the French NOO group, CIFFEN, will hold a symposium on "Tourism in Polar Areas." Yours truly, along with Antarcticans Swithinbank, Heap, and Splettstoesser will be there, as will Stonehouse and his team, and Boris Culik, whose work on penguin/human interactions is being used by some to suggest closing down penguin colonies to tourists.

So, why is it a funny farm? Too many tour ships with, perhaps, too little supervision, as well as too many people doing too many stupid-people-tricks. This season, in addition to the parasailor, there was supposed to be a motorcyclist taking a specially designed (and pollution-free) cycle over the plateau to the Pole. By early February, Palmer was inundated with more than 13 private yachts. And what about constructing a tourists' mecca at Nelson Island? It's nice to be home for a while.

NELSON ISLAND, A PROSPECTIVE TOURIST HAVEN. There is an aging Brit by the name of Bernard Stonehouse who has a grandiose plan for developing Nelson Island as an Acapulco South. Whether this is just a pipe dream, we're not certain, but he seems to think that Nelson would be an ideal island on which to build a tourist hotel where tour ships could disembark passengers so they could stay there and observe the Chin-straps or whatever. But there's a fly in his ointment, as the Argentines proposed that part of Nelson Island should be set aside as a Site of Special Scientific Interest (SSSI), which was subsequently approved. As we understand it, people do not need government permission to visit such a site, but they should have a legitimate reason. Now the question is whether tourists are illegitimates. A Chinstrap would nod "yes," a cruise director would nod "no."

Stonehouse has been described to me as a "pretty good wheeler/dealer , and he spent most of the past austral summer at Half Moon Island, where he reportedly got along famously with the Argentines. But it's one thing getting along with some camp personnel, and an entirely different thing getting that nation's blessing to develop Nelson as a tourist center, when they themselves have sort of done the same thing on King George Island, just to the north of Nelson Island. Supposedly The World Wildlife Fund is backing Stonehouse, although to what extent we do not know. The area which they are looking at is supposedly Harmony Point.

We presume it is inevitable that someone will put up a hotel for tourists unless some sort of legislation is enacted which would prevent it. With the mineral rights final] being resolved, tourism seems to be the issue on the front burner. When Congressmen from the United States visited Antarctica in late 1957, the Representative from the State of Maine gave an interview at McMurdo in which he envisioned a hotel for tourisl being built in Antarctica. The old codger, long since deceased, was pretty clairvoyant, although at the time everyone thought he was out of his cotton-pickin' mind.

Nelson Island seems to be sort of an innocuous choice, as there are no scientific stations to be disturbed, and it might result in fewer visits by tour ships to such stations as Palmer, Arctowski, Rothera, and others in the area. And tourists who slept in a hotel there might come away with a sense of having actually bedded down on a piece of Antarctica. The more virile ones might be able to announce nine months later that they conceived "on the ice." It has all sorts of interesting possibilities

We understand there are other Brits who favor development of South Georgia as a tourist center. This island is north of 60°S, so is outside the jurisdiction of the Antarctic Treaty. The island is certainly spectacular, has a lot of majestic scenery, and the King penguin is probably the most photogenic of all penguins. Anyone who gives a hoot about Antarctic history has to have a warm spot for the accomplishments of Shackleton in crossing the island. The bad part for tourism is that those who go to just South Georgia might feel that they have been shortchanged for their bucks, as they were only in sub-Antarctica.

A LETTER FROM THE GOVERNOR OF OREGON, BARBARA ROBERTS.

Dear Antarcticans:

As you know, the United States has a long history of involvement in the Antarctic. As a country, we can be proud of the many accomplishments achieved while on research and exploration missions on that continent. But nowhere in the United States is there a National Antarctic Center where the public can get a sense of that history.

Reedsport, a coastal community in Oregon, became interested several years ago in creating such an education and information center. That dream is on the way to becoming a reality - The Richard E. Byrd National Antarctic Center.

The cornerstone of the four-part development plan, the Antarctic Merchant Marines Memorial, is nearing completion. This memorial consists of the research vessel HERO and a small museum, the Discovery Center. The remaining three parts of the center would consist of the Glacier National Icebreaker Memorial, the Antarctic Science and Exploration Institute, and the Antarctic Aviation Memorial.

As Governor of the State of Oregon, I support designation of the Richard E. Byrd National Antarctic Center in Reedsport as the United States National Antarctic Center. I also affirm my support for the Richard E. Byrd National Antarctic Center as a crucial component of Reedsport's Umpqua Riverfront Revitalization project.

We have the opportunity to create something here that will educate and inform generations to come of the service and dedication of Americans who explored Antarctica

and who set the standards for research there. I commend those individuals and organd zations who have kept the faith, and urge the Antarctican Society to continue its support for this project.

Cordially,

Barbara Roberts
Governor

SUNSET AT THE SOUTH POLE, 23 MARCH 1992 (Steve Warren, South Pole Station Scientific Leader). In March the Sun moves one degree to the north every two-and-a-half days. The Sun's width is half a degree, so at the South Pole it takes thirty hours for the Sun to set: thirty hours from the time the bottom of the Sun touches the horizon until the upper rim finally disappears. This is the most leisurely sunset anyone on Earth experiences. The lower half of the Sun has been hidden by blowing snow, but we've had spectacular views of the upper arc.

We can still see the Sun today because of refraction with the temperature-inversion: the air temperature today is -62°C at the surface, 450 meters aloft it is -34°C.

The Sun no longer looks round; it's a stack of three orange pancakes. The tops and bottoms of these cakes ripple with the wind. The left and right edges flash alternately yellow and green. Behind me, on the night side of the sky, the past-full Moon shines high and bright.

We were treated to a fine show on the 21st. The entire Sun was still above the horizon, but it was giving us a farewell display that isn't supposed to happen until the upper rim sets. Green flashes came and went for an hour or so. From the green-fringed shimmering upper arc, green flakes would cleave off, rise, then disappear; sometimes two or three flakes would be following one another as if on a conveyor belt as the top one disappeared another would rise from below. Then came the most amazing shocker that stunned us all, wide-eyed and gaping: a triangular green cap perched on top of the orange disk; this little green pyramid was visible to everybody, not just those with binoculars. What a treat! There were some wide grins on those orange-glowing faces at the skylab window!

> (Ed. Note. As an ex-masquerading micrometeorologist who wintered over at the South Pole, I wonder what the people at the Pole are drinking nowadays. The green flash is one of the most elusive phenomena on earth to catch. I have never seen it. We aren't saying that Steve and the folks at the South Pole never saw the green flash, but the account is written so vividly and in such detail that we wonder if they are trying to pull a little wool, or green light, over our eyes! What do you say, Will Kellog?)

LIME DISEASE IN THE ANTARCTIC (Matthew P. Houseal, M.D., Amundsen-Scott South Pole Station - from The New England Journal of Medicine, Vol. 326, No. 5, 30 January 1992, page 351). The Amundsen-Scott South Pole Station closes in mid-February, leaving 21 people behind to conduct research and operate the base for the 8 1/2 months until the first flight of the next austral summer. A large shipment of food is delivered just before the station closes. One of the items is fresh limes. These are stored in an outside walk-in "refrigerator" that is heated 65°C above the ambient temperature (to 5°C). Because of the extremely low water content of the ambient air at the South Pole and the degree of heating by the refrigerator, the relative humidity plummets. In this environment, limes quickly desiccate and in a few weeks become unfit for consumption. To avoid this, station personnel get together shortly after the station closing for a lime-squeezing party. This year it

took 12 people a total of four hours to squeeze the juice out of 120 pounds of limes. The juice was then frozen for use later in the winter.

The day after the lime-squeezing party, I was consulted by one of the participants because of a pain in his right elbow. He had been a prolific lime squeezer, gripping and rotating a juicer with his right hand while holding the lime half in his left. Examination revealed an acute lateral epicondylitis. The syndrome resolved with conservative treatment. This is the only case of lime disease ever seen at the South Pole.

PENGUINMANIA REACHES NEW ZENITH. Is there any Antarctican who hasn't been smitten by penguins? Many of us have even carried this love into our homes with all sorts of penguin memorabilia. Everything in Karen Ronne Tupek's home is in penguin motif, and when Karen crawls into bed every night, she is probably dressed up as a penguin, or at least has a penguin nightgown on. But she now has to take a back seat in the bus, way in the rear, as penguinolegist Bill Sladen has the piece de resistance. He has a bathtub in his home out in Airlie, Virginia which has a tile mural of Emperors, Rockhoppers, and Adelies. The backdrop is all those fantastic snow-covered Antarctic mountains — truly beautiful!

The designer, Firedrake Studios, 482 Swanton Road, Davenport, California 95017 (Tel. 408-426-5091, Fax 408-427-1717), has a one-page color ad out with Bill shown in the tub with a parka on, with a balaclava, and a telescope, surrounded by hunks of ice. They evidently thought, and with great wisdom, that Bill's body would never sell any murals, so they put clothes on him.

Don't tell us you are into penguinmania unless you tell us you have a tub like Bill's as you're a nothing unless you have one like his. IT'S THE ULTIMATE! When you order yours, better specify that you don't want Bill coming with it.

ARTISTS ON ICE — ANTARCTICA: Images from a Frozen Continent.An art show currently at the Concourse Gallery, Upper Arlington Municipal Center (Upper Arlington is near Columbus, Ohio) should please anyone with an eye for Antarctica, as two talented artists, Alan Campbell and Stuart Klipper, are exhibiting. Both have been lecturers at our Society meetings in Washington, and each is hung in Ruth Siple's home. We feel akin to both, as Alan learned all he needed to know about lighting while painting on North Haven Island, which lies just offshore from where this intrepid soul lives. And for anyone who dresses like Stuart, he has to be the idol of those of us who hate neckties and suits. We have seen some of Alan's paintings and some of Stuart's photographs, and they are truly superb. Their exhibits will be at the Concourse Gallery through 15 April.

Garry McKenzie has been deeply involved in the art exhibit, and has high hopes that this show will appear in other galleries across the country, including the Smithsonian, under their SITES (Smithsonian Institution Traveling Exhibition Service) program. We have given quite a bit of ink in the past to both Stuart and Alan, but will repeat the party line on them as presented in the Quarterly Publication of the Upper Arlington Cultural Arts Commission.

> Photographer Stuart Klipper, who has exhibited in the San Francisco Art Museum and the Minnesota Museum of Art, has works currently being toured by New York's Museum of Modern Art. His photographs are in MOMA's permanent collection.
>
> Curator Peter Galassi, the Department of Photography, the Museum of Modern Art wrote, "Antarctica is a perfect subject for Stuart Klipper. For more

than two decades he has traveled and photographed with indefatigable zeal, as if to recreate single-handedly the fascination of expeditionary work." Klipper's panoramic photographs in this exhibition were made by him with a Linhof Technorama camera. The camera allows Klipper to make three-foot wide prints that are, continued Galassi, "stunning at once for their breadth and for their subtlety of description."

Alan Campbell was selected to participate in the U.S. Antarctic Program because of his level of professional experience and well-known emphasis of color and light in his paintings. Discussing his Antarctic paintings, Campbell asserts, "The works are not scientific illustrations, but my own free interpretation of the elusive and, at times, surrealistic sights, sounds, and sensation of this most magical and mysterious of places."

When asked about his adventure, Campbell responds, "I have painted the turquoise blues and greens of an ice cave in the Canada Glacier, spent days with 5,000 Adelie penguins in the rookery at Cape Royds, slept on the floor of the huts of the early explorers Shackleton and Scott, watched Killer whales in 2 a.m. sunlight from the stern of an icebreaker, and sat in a place so quiet you could hear your heart beat. These are experiences that elude easy description."

AFTER ALL THESE YEARS, CHET LANGWAY HAS FINALLY MADE GOOD. Chet Langway had some visibility when he was at the Cold Regions Research and Engineering Laboratory at Hanover, but then he went to Buffalo, and when anyone goes to Buffalo, it's like going into the Bermuda Triangle. Buffalo is only heard from when political humorist, Mark Russell, tapes one of his shows from there. But we were aware that there was a Langway somewhere, as his nephew was/is quite a hockey player with the Washington Capitals, once being named the top defenseman in the entire National Hockey League. Later he became really famous when he divorced his wife and married what a Washington reporter called "an erotic dancer." Meanwhile, Chet was there in Buffalo maintaining a low profile, but a decidedly widening low profile, because when he did make it to Washington to some meeting, it was obvious that Chet wasn't missing any meals.

But all this time the University of Bern knew about Chet, and they recently gave him an honorary degree of Doctor of Philosophy. Translation of the Latin text read "Distinguished and learned author Chester C. Langway, pioneer in the discovery of information about the history of the earth that is contained in the polar ice, who has moreover in cooperation with researchers at the University of Bern developed significant basic findings for our understanding of climatological and environmental processes."

Langway (a professor at SUNY-Buffalo since 1975) found the strongest response to his ideas and plans in Europe in the Laboratory for Geophysics at the University of Copenhagen (Prof. W. Dansgaard), and in the present-day Division for Climatological and Environmental Physics of the University of Bern. A productive cooperative relationship of long duration began, whose high point was the drilling of the polar ice shield at the radar station Dye 3, Greenland. The results of this cooperation are:

— the reconstruction of the climatological history of the North Atlantic and and the Antarctic for the last 100,000 years;

— determination of pre-industrial concentrations of the greenhouse gases carbon dioxide and methane;

— the discovery of natural variations of these gases synchronous with transsitions between ice ages;

— observation of variations in the concentration of radioisotopes originating Ln the cosmos, which are caused by solar modulation of cosmic rays.

These findings have contributed materially to our present understanding of the earth as an interactive system of chemical, physical and biological processes. Langway's willingness to cooperate beyond the borders of the continents made it possible for the University of Bern too to contribute to this research, which has led to significant new scientific findings.

From now on we will have to refer to Chet as the famous ice man who just happens to have a millionaire nephew who skates on the stuff.

BERGY BITS. Dorcas Den Hartog Wonsavage didn't exactly have a spectacular Winter Olympics, although every competitor in the Olympics was a winner in his/her own right. Dorcas came in 44th in the 15K cross-country skiing, 45th in the 30K cross country skiing. Probably getting married slowed her down a bit..... Norman Vaughan, the Irrespector of Age, finally decided to show some personal acumen when he came back from being a guest musher at the Winter Olympics, and dropped out of this year's Iditarod race after being in it for about a week. After seeing the bright lights of Albertville after dark, that long sledging trip in the wilds may have lost some of its appeal to old Norman who is still young at heart at age 87..... When students were at Cape Evans this past austral summer, helping clean up the place, they found Apsley Cherry-Garrard's long Johns frozen at the bottom of a bathtub. A winsome-looking Nicola Hill was quoted as saying, "They smelt of salt and had the initials C.G. written on them. It looked like the boat had just come and they had just left." .... Under the good new category, we understand that a large group of Greenpeace personnel were at Cape Evans removing all their huts and equipment from the area. Congratulations to Greenpeace, although, to begin with, they should never have selected such hallowed territory for their camp. Do you want to have a good T-shirt while making a worthwhile contribution to preserve Antarctic historic huts? Buy one of the Antarctic Heritage Trust T-shirts for $20 (Freeport 1453, Antarctic Heritage Trust, P.O. Box 14 091, Christchurch, New Zealand. John Splettstoesser has now lectured as a naturalist on Antarctic geology and history on thirty-four Antarctic cruises since 1983, and during that time has actually seen several tourists under sixty years of age. Honest! His bride from the Late Pleistocene, Beezie, has made twenty-three cruises, lecturing on birds and birds and more birds. Our beloved whale spotteress, Dotte Larsen, was evidently snake-bitten about five years ago, and has been plagued ever since with miscellaneous and sundry problems with limbs and joints and whatnots. Last November, without even trying, she fell and broke her pelvis and a finger, and damaged her lower spine. If Dotte doesn't watch out, Professor Bill might try and trade her in for a model with functional parts. Dotte is a real sweetheart, and we sure wish her a fast return to the whales. Although the following will never be a big seller on coastal Maine, you should know that the British Antarctic Survey, Natural Environment Research Council, High Cross, Madingley Road, Cambridge CB3 OET, UK, has recently published An Annotated Bibliography of Antarctic Invertebrates (Terrestrial and Freshwater) by William Block. It covers a span of 168 years (1822 to 1990) and has 1400 entries, most of which contain abstracts, some of which may actually be interesting to someone somewhere on a particular day. Takes all kinds, you know..... James Barry Burnham has been unearthed. He was the only scientist from the first two years at the South Pole whose whereabouts were unknown. But he is alive, lives in Tolland, Connecticut, works in Farmington, Connecticut, and met his wife, Joan, sky diving. Beware of men who sky dive, as they are bound to be unstable. I guess it must also apply to women sky divers! Jim was discovered by his ex-working partner at the South Pole, Charlie Greene, when Charlie and Jim were traveling on the same plane last winter..... Lady-in-Waiting, Pam Davis, is happy as a clam at high tide in Cambridge, and may never leave the Scott Polar Research Institute. She is the Grand Dame of the shell on which she rows, being twice as old as the other women. But Pam, you have class and quality, and that counts, so you always be a winner.