



THE ANTARCTICAN SOCIETY

905 NORTH JACKSONVILLE STREET
ARLINGTON, VIRGINIA 22205

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THE ANTARCTICAN SOCIETY AND THE NRC'S POLAR RESEARCH BOARD

present

OIL SPILL AT PALMER STATION

by

Dr. Ted E. DeLaca
Head, Polar Science Section
Division of Polar Programs
National Science Foundation

on

Thursday evening, 4 May 1989

8 PM

The National Academy of Sciences
2101 Constitution Avenue N.W.
Washington, DC

PRECEDED BY

*Cocktails in the Great Hall at 5:30 PM
and*

Dinner in The Members' Room at 6:45 PM

Dr. DeLaca is half-Californian, half-Antarctican. As an undergraduate major in biology, he specialized in aquatic microbiology at the University of California at Davis. He obtained his PhD in ecology at the same university, writing his thesis on the benthic ecology of Antarctica. Prior to coming to NSF in July 1986, he had twelve years of Antarctic research. He has been a college professor at Davis and also at the University of Washington, and also a research biologist at Scripps Institution of Oceanography. He's the Perfect Man to talk about the Pilferage of Palmer.

For those who come for the whole evening, do we ever have a bargain! For only \$25 you get cocktails, then a dinner of chicken with pesto sauce, zucchini and yellow squash, some rice, good old French bread, a drop or two of white wine, and some cool chocolate mousse. Andrea will take care of Board members. The rest of you PLEASE send your checks to Ruth Siple, 905 N. Jacksonville St., Arlington, VA 22205, by Saturday, 29 April. Washington in early May is FANTASTIC. Bring your best friend. *PRIME TIME, PRIME SPEAKER, PRIME SUBJECT, PRIME COST.* Make your reservation now! Don't delay!

GROWLERS

After four months and three days of intense frustrations and growlings, the post and beam is finally up and standing on the coast of Maine. So now it's time to take a break and growl out another Newsletter. As it was in the beginning, is now, and ere shall be, this column is nothing more than a potpourri of unconnected, disjointed bits and pieces of Antarctic items, which may or may not be truthful, and in no way constitutes the opinions or thoughts of the Society.

MEMBERSHIP. Membership has sort of stabilized this year. We have picked up over fifty new members, but we have lost quite a few along the way. The good news is that nearly all of the new members have an Antarctic background, and that many of the drop; were non-participants. We don't need sheer numbers.

Some good old boys (and women) who have gone delinquent are:

| | | |
|--------------------|---------------|--------------|
| Dick Cameron | Jim Fletcher | Art Owen |
| Bill Cooke | Joan Cosink | Don Siniff |
| Dagmar Cronn | Bob Harler | Ron Thoreson |
| Alice Dater | Richard Hayes | Ken Waldron |
| Stephen Eittreim | Jeff Larminie | Joe Wubbold |
| Debbie Enzenbacher | Marc Levesque | |

We would like to keep these people aboard, as there are some real good ones on that list. But on the other hand, we hate to send Newsletters to deadbeats!

ALAN CAMPBELL BIG ATTRACTION. Although our priorities kept us in Maine, we understand that Alan Campbell took Washington by storm. Not only was his art show highly successful, but his presentation before the Society resulted in the largest turnout that we have ever had for a meeting at the National Science Foundation. He ran out of posters for attendees, but those who got left out were given rain checks redeemable at the gallery where his paintings were exhibited. Our Honorary President bought one of his watercolors, a lovely one of Hughes Glacier in Taylor Valley. Alan is going to submit a proposal to NSF to visit the Antarctic Peninsula during the upcoming austral summer. Sure hope he makes it, that there will be another Washington showing, and that he will talk to us again so I can see and hear him. We asked Charlotte Evan the roving, free-wheeling, free-lancing writer whose name shows up occasionally on Antarctic articles in the New York Times, if she would write something on the exhibit for the Newsletter. She wasn't too enthralled to get the request after the show was closed and Alan had left town, but she decided to cooperate rather than fight, so we are indebted to Charlotte for the following:

When Alan Campbell, a Georgia artist, told people he had been selected by the National Science Foundation to go to Antarctica during the 1987-88 season, he heard a lot of "white paint" jokes.

Just how off base those were was illustrated at the Addison-Ripley Gallery in Washington in February - in blues and purples and pinks and aquamarines and golds and grays and, well, one could go on.

There was 321, the LC 130 Hercules that had been buried in the ice for 16 years, aloft over the trans-Antarctic Mountains. It was painted from photographs Alan took from the open ramp of the escort plane on the flight

back to Williams Field. There was the Polar Star at work in McMurdo Sound, a red cigar dwarfed by the Royal Society Range.

There were lots of penguins, of course, including a striking dark vision of a rookery at midnight.

"The main reason we put on the show," said gallery co-owner Chris Addison, "was to promote the idea that art is an adventure, and Alan is the definitive type who takes an idea and draws it out, like a story. People really responded to that."

Some thirty paintings were sold, he said. Penguins were popular, not surprisingly, and so were the historic huts — things that defined Antarctica as a place where adventurers had established a foothold, he said.

Mr. Addison's parents bought one of the largest paintings in the show, a lushly-hued view of icebergs at Cape Hallett. Typically, he said, they collect much more conservative art, "so to commit to something like that was a big deal."

Alan is back in Athens, Georgia now, dividing his time between painting and scheduling additional exhibitions.

Would he like to go back to Antarctica?
Does the Polar Star break ice?

HONEYMOON ENDS AT PALMER. When the STATEN ISLAND left Lyttleton on 5 January 1963 to conduct a survey of Palmer Peninsula (later to become the Antarctic Peninsula) Capt. Price Lewis, John Crowell, Waldo Schmitt, and Edwin McDonald (later to become Edwin MacDonald) were entrusted to find the proper site for a permanent biological station. One of their specific directives was to find a site with "richness in biological matters." They did their work well, and found just the right place on Anvers Island, a site that was to become Palmer Station. Marine biologists have flocked to Palmer since the early 1960's, and the National Science Foundation has spent some 80 million dollars on the station and its research. Palmer Station has been leading a charmed life, ideally situated so that originally only purposeful scientists and visitors ever got there. Everything was rather serene, peaceful, and quiet as it should have been, but in the 1980's something was happening, cruise ships were becoming more and more prevalent. They occasionally carried some pretty influential U.S. citizens, and a decision was made at NSF that tourists would be briefed on Palmer activities as long as they did not affect the day-to-day operations of the base.

On 28 January 1989, everything which had been so carefully established and nurtured at Palmer was jeopardized when the Argentine supply/tourist ship BAHIA PARAISO visited the station. There were 81 tourists aboard, including 46 convincing Americans who talked the captain of the ship into visiting Palmer, evidently against his wishes (according to Chicagoan Karen Schmidt, one of the tourists), as it was not a scheduled stop. Ted DeLaca of the Division of Polar Programs, NSF, said the visitors "hotly debated the potential effects of tourism in Antarctica and what the environmental consequences would be if a ship went down and spilled oil." They spent three hours at the station, then returned to the ship, which weighed anchor and began pulling out. Supposedly the captain was forewarned about some undersea rocks, which one source said did not appear on Argentine charts, but others say they do. Within two miles of Palmer, the ship found the rocks, and the rocks won out, ripping open a 30-foot gash in the double-hulled, 435-foot long ship. Karen said that "dishes started coming at us. A very scared voice said something in Spanish. Since the waiters were leaving, we got the message and left." Sounds like combat, doesn't it? But from that minute, Palmer's honeymoon was over, and all hell was to break loose.

In addition to the 81 tourists, there were 236 crew members. Although people are bad enough, what the ship was carrying was even worse - 250,000 gallons of diesel fuel, a tank of jet fuel for helicopters, over 200 canisters of compressed gas (propane or butane) and about 100 55-gallon drums of an unspecified petroleum. The ship listed about eight degrees for the first two days, then took on an increased list to about eleven degrees, with an occasional dip to twenty-five degrees. Its captain predicted, with the same wisdom he conned the ship, that the BAHIA PARAISO was going to break up and sink. Probably wishful thinking on his part! On the fourth day, 31 January, the ghost ship floated free, and, as a derelict bounced along the coast. It floated free for several hours until at 2100 hours local time, it turned over against the shore. Dead!

The U.S. response to the accident should be roundly applauded. Karen Schmidt said that the base couldn't have been nicer to them. It also helped that two cruise ships, the Society Expeditions' EXPLORER and the ILLIRIA were in the immediate vicinity. In fact, the EXPLORER was due to drop anchor at Palmer half an hour after the BAHIA PARAISO departed. The EXPLORER transported 132 tourists and crew members to the Chilean base, Teniente Marsh on King George Island. The ILLIRIA transported another 80 to the same destination. One unfortunate incident happened which involved our October Society lecturer, Bruce Manheim, who was a passenger on the EXPLORER. It was claimed by the ship that NSF staff members sent a telex to the ship requesting that no one aboard mention the wreck in calls home. Manheim took exception to this, interpreting it as a gag order, and called a news conference when he got back to Washington. Jack Talmadge of NSF denied any knowledge of the telex being sent. Regardless of what did or did not transpire, I'm personally very disappointed in Manheim - it was a low blow! -as I think the whole station and NSF responded nobly and fast to a very delicate and critical tragedy, one where they put aside the loss of treasured programs and thought only of personnel and preserving what was left of their once-great environment.

Scientists from Palmer noticed a large oil slick leaking from the ship on the second day. According to DeLaca, the oil appeared to be centimeters thick on the surface of the water, turning waves brown and washing up on the rocky shores. After the ship capsized on the fourth day, larger amounts of oil spilled from the tanks and from the cargo on deck. DeLaca and his colleagues immediately attempted to curb some of the lost oil. He said, "We collected as many of the containers as we possibly could because we felt that they would confuse any salvage or containment effort ... pose a hazard to navigation in the area ... and act as little time bombs for future ecological damage." DeLaca estimated that they were able to retrieve about 130 of the large cylinders and 25 to 30 of the 55-gallon drums, though many floated away out of the recovery range. The salvage operation is still going on as we write this Newsletter, and it will be a long, long ongoing process with both Argentinians and Americans involved. Just how long it will take is anyone's guess, as the elements will determine that. The good news is that all leaks have been stopped, the ship has been stabilized, and they are still pulling oil out of the tanks.

The National Science Foundation launched a fuel containment recovery mission from the U.S. consisting of 52 tons of oil spill cleanup equipment supplied by the US Navy, and a 15-member team of experts representing the NSF, the US Navy, the National Oceanographic Atmospheric Administration (NOAA), and private contractors. A US Air Force C-5B transport left Norfolk Naval Air Station on 1 February and flew to Punta Arenas, Chile, where the NSF research vessel POLAR DUKE finished transporting the gear to Palmer. Global Associates/Phillips Gartner and Company, Inc., of San Ramon, California provided the following equipment: a 24-foot boom-handling tow boat; air compressors; 2,000 feet of inflatable boom; portable and shipboard communication devices; a 30-kw generator; a skid-mounted, portable, diesel-powered jetting pump that can pump about 500 gallons per minute (GPM) at 200 pounds per square inch pressure; a 350 GPM pumping system; a six-inch submersible hydraulic pump system; a 12-foot wide Rapid Deployment

Skimmer System, and a shop van. The floating boom was set up almost immediately by the first salvage ship to arrive, the Chilean vessel YELCHO. Other equipment was a 36-foot boat for skimming the fuel off the water; chemicals to absorb the fuel; floatable bladders to contain the contaminants once they were collected; a tug boat to move the equipment on the water; a special vehicle with a movable flatbed for loading and unloading the boats and containment equipment.

As for wildlife damage, the returns aren't in from the outlying precincts, and probably won't be for years. One of the first to be affected was krill. According to DeLaca krill swimming near the wreckage were swimming erratically and attempting to jump out of the water. Several thousand dead and dying krill washed ashore along a 100-meter stretch. A colony of about 24,000 penguins is also at risk, especially hatching penguins. DeLaca was quoted as saying the oil affects the birds' insulation and buoyancy as well as causes a toxic effect when ingested (as penguins are prone to do while preening). Scientists did consider screening the penguins away from the water, but realized that this was impracticable, as it would have required thousands of pounds of food organisms and a heck of a lot of effort to feed them. Researchers estimate that the spill might cause the penguin mortality rate to reach 40%. The young skua population has been wiped out. There are around 760 pairs of adult skuas in the area, and when they carried the oil-coated krill to their nests, the results were disastrous. Skuas who normally fiercely defend their nests stopped doing it; some even started attacking the chicks and eating them. So there will be no skuas at Palmer with 1989 birth certificates. A fair number of cormorants will also be lost.

There are two bird projects at Palmer which have been seriously affected, one from the Point Reyes Bird Observatory, one from the Antarctic Marine Living Resources (the U.S. contribution to the International Committee for the Conservation of Antarctic Marine Living Resources).

The spillage crippled two crucial experiments that sought to gauge the impact of the ozone hole. Precious little is known of the long-term effects of ultraviolet radiation. Some worry that, among other things, it harms the tiny sea creatures and organisms which sit at the bottom of the ocean's food chain. Only two sets of experiments have tried to investigate this, and both are based at Palmer. Dr. Deneb Karentz from the University of California at San Francisco has been trying to measure the effects of ultraviolet radiation on the growth and reproduction of plankton, algae, and other creatures at Palmer. Intriguingly, she has found various amino-acid-like compounds which the organisms seem to be able to use to protect themselves from the radiation. The pollution from the ship wreckage will make her attempts to study the compounds hard, if not impossible, for now. Dr. Osmund Holm-Hansen and his team from the Scripps Institute for Marine Resources in San Diego, did similar work last spring. This spring it will be difficult. It may well take plants and animals much longer to recover from a spill in the cold Antarctic than it would elsewhere. Nobody knows, because there has never been a serious pollution in such conditions.

David Bresnahan, one of the older, and presumably wiser, but not necessarily so, Special Projects Managers, is at Palmer supervising the cleanup operations. In late February, Peter Wilkniss took a team of international reporters and top ranking diplomats from several nations to Palmer so they could see for themselves just what had transpired, and the concerted efforts being put out by all involved in trying to recover from an environmentally tragic accident. NSF's whole operation appears to have been top-drawer. Because of the great interest by all Antarcticans in what transpired, we have asked Ted DeLaca to be the speaker at our next meeting (see cover sheet). So be sure and come to the meeting, and hear it straight from the man who knows all firsthand from being on site at Palmer.

(This material was put together from various and sundry newspaper clippings, from NSF press releases, and, especially from the Oil Spill Intelligence Report, Vol.XII, No. 7 published on 13 February 1989). Additional information on Palmer on page 10.

EDWARD EVANS GOODALE, 1903-1989. (by George Toney) A generation of IGY and USARP Antarcticans mourn the passing of Eddie Goodale, who died on January 18, 1989 in Bangor, Maine after a long illness. According to his devoted widow, Eleanor, Eddie had spent the last four and a half years in a nursing facility; a rapid decline in his physical condition set in in early January.

Recent Antarcticans recall Eddie as the kindly, paternal majordomo of the Christchurch advanced headquarters for the U.S. Antarctic Research Program, where he held sway from the IGY, 1957-58, until his retirement in 1968. There he greeted the neophytes arriving from the States and preparing for flights to the ice, and the field-tested veterans returning from work at the bottom of the world, and hungry for the flesh pots of New Zealand.

Eddie had begun his lifelong affair with the cold regions as a young man of twenty years, when he performed voluntary work at the Grenfell Mission in Labrador in 1923. He later attended Harvard University, but succumbed to the lure of adventure and joined the first Byrd Antarctic Expedition in 1928, wintering over at Little America.

In the peak of condition, Eddie relished the unremitting grind as a dogdriver hauling supplies and construction materials from the ice barrier to the base site. He threw himself into the construction of the base with equal vigor. But another Eddie was also manifested in his off-duty pursuits. In later years, he reminisced about the stringent limitation imposed on the transport of non-essential personal gear on the crowded expedition ships. Eddie's one indulgence was his copy of the Oxford Book of English Verse which stood him in good stead through the dark period.

During World War II Eddie served first as special consultant to Chief of the U.S. Army Air Force, and later assisted in the establishment of Search and Rescue bases. He joined the staff of the Air Transport Command, heading up its Search and Rescue organization in 1946. In this capacity he participated in the air rescue of the crew of a B29 bomber which had crashed in north Greenland. For this feat he received the Air Medal and a citation from President Harry Truman.

Following the war Eddie joined the U.S. Weather Bureau where he remained from 1947 to 1955, active in the establishment and operation of a network of weather stations in the Canadian Arctic and northern Greenland. Among his functions was the recruitment of cooks, mechanics, radio operators, and weather observers to man the tiny camps scattered through what is now known as the Queen Elizabeth Island, and at Thule. Eddie's genealogy and respect for the varied motivations of the men he interviewed by the dozens for hazardous and isolated jobs earned him the enduring respect of the U.S. Weather Bureau polar clan.

The IGY gave Eddie the opportunity to revisit his Antarctic haunts, to his great delight. In 1955, as the representative of the U.S. National Committee for the IGY, Eddie sailed with Admiral Byrd on the GLACIER when the icebreaker carried the Admiral on his last trip to Little America. Eddie next took part in the installation of the Byrd IGY station in the interior of Marie Byrd Land. His Christchurch period followed in 1958.

In retirement Eddie and Eleanor wintered, fittingly, in Winterport, Maine, on Penobscot Bay; summers were spent at Winter Harbor on Frenchman's Bay. In the picturesque Down East towns and shores they pursued a leisurely, well-tempered existence that has made New Englanders notable in a frenetic world. Eddie, who had survived decades of robust hardships in remote harshness, indulged himself in the quieter and contemplative pursuits bred in him by his scholarly physician father and his gentle mother.

Eddie was born in Boston on April 7, 1903 to Dr. Joseph Goodale and Adelaide Evans. Surviving him are his wife, Eleanor (R.D. #2, Box 214, Winterport, Maine 04496), and, in California, a daughter Evelyn, two granddaughters, one grandson, and a great granddaughter.

Early this month, not six weeks after Eddie had gone, Eleanor received in the mail an envelope from the White House. Inside, resplendently adorned with a golden Presidential seal, was the following tribute:

"The United States of America honors the memory of Edward Goodale. This certificate is awarded by a grateful nation in recognition of devoted and selfless consecration to the service of our country in the Armed Forces of the United States."

(signed) George Bush
President of the United States

(George Toney, a graduate of a small but excellent college in Maine, Bowdoin, was rescued from the throes of high school teaching by Eddie Goodale who showed him the way to the Arctic. Later, George was the first scientific leader at Byrd Station, 1957, and worked in the Office of Polar Programs at NSF in the 1960's. But he became unscrewed and left NSF for the law profession, and now serves as just another lawyer in Washington.)

IF YOU LIKE BIG ICE CUBES. George Prodanchek of the Navy/NOAA Joint Ice Center keeps us informed on how B-9 is doing. This illustrious iceberg leads a checkered career, almost bouncing off the Ross Ice Shelf in early August 1988, and presumably getting hung up on an undersea ridge this past February, which prevented it from going any further east and south. In the last month the winds/currents seem to have dislodged it, and it's moving now in a more northerly and westwardly position. George said the short two-week fall season ended about two weeks ago, and that new sea ice has again formed around it. B-9 is 76 nautical miles long, 19 nautical miles wide. If you are interested in where the berg is, on 15 March it was at 76°58'S, 173°47'W. Back on 13 October 1987, she was at 78°10'S, 161°25'W. The farthest north she has ever been was in November 1988, when she got to 76°20'S.

Incidentally, George is interested in knowing who has been fooling around with his berg. It seems that a Dutch registered ship, part of an official Italian expedition, having aboard a USGS scientist from Menlo Park (presumably Guy Cochran) spent a considerable amount of time near his berg. If any of you folks know Guy, or whoever was there, George would like to talk to him/her. His address is 4301 Suitland Road, FB #4, Room 2301, Washington, DC 20395, or telephone 301-763-5972, FTS 763-5972, Telefax 301-763-4621.

STATE DEPARTMENT INSPECTION TRIP SUCCESSFUL. The Coast Guard's icebreaker POLAR SEA has recently completed a short inspection trip, 9 February-25 February, when they visited Scott Base, Terra Nova, Gondwana, Cape Bird, Leningradskaya, and Dumont d'Urville. For the first time ever, our State Department inspection included half a dozen historical monuments, half a dozen SSSIs (Sites of Special Scientific Interest), and a few SPAs (Specially Protected Areas). Confirming what Peter Wilkniss had told us, the new Italian base at Terra Nova Bay is evidently a masterpiece, being strictly state-of-the-art. At the present time, Terra Nova is only planned as a summer station. There were about 80 to 100 people there when the party made their inspection. At Gondwana, they found a skeleton crew of five, although about thirty scientists were working in the field. Gondwana will probably be completed in 1991, and will house thirty to forty people. Greenpeace had already touched down at Dumont d'Urville before the POLA SEA arrival. The French downplayed what happened, saying a few people laid down in front of their vehicles working on the airstrip-to-be, they were removed without much fanfare, and the work went on. We are indebted to Ray Arnaudo of the State Department

for giving us this information over the phone. His only regret about the whole trip was that no arrangements had been made to get a key to Scott's Hut at Cape Evans. A slight disappointment was that ice conditions did not allow them the opportunity to visit Cape Adare.

WOMEN ON THE ICE: A HISTORY OF WOMEN IN THE FAR SOUTH. (Melbourne University Press, 1986) (Review by Mildred Rodgers Crary). A few men may still object to the presence of women in polar regions on the grounds of hardship and male privilege, prerogative, and privacy. But as early as 1817 – before Nathaniel B. Palmer was the first to sight the Antarctic continent – Antarcticans of a different opinion had even smuggled women aboard on scientific explorations as well as whaling and fishing voyages to the far south.

A compact, succinct, and nevertheless fascinating account of women's role in antarctic history, *Women on the Ice*, by Elizabeth Chipman should be on the shelves of every polar library worthy of the name. It is the product of extensive and meticulous scholarship by a woman whose early and lasting involvement in explorations of the southern continent dates back to the International Geophysical Year, when she, then 19, went to work for the Australian Division of the Department of External Affairs. An appealing introduction tells of her own antarctic adventures.

We learn from Chipman that a castaway, rescued by Captain John Balleny from Campbell Island, whose name went unrecorded, was the first of her sex to see the Antarctic continent in 1839. We learn the name of the next woman on record to visit antarctic waters (in 1906-1907), the presumed wife, Betsy Rasmussen, of Captain Adolfo Andresen (called his "companion" by Chipman's source). We learn about the Russian Professor Marie Klenova, the first woman scientist ever to work on the continent and in antarctic waters (beginning in 1955) and about the Russians' continued use in Antarctica of women scientists and support staff from 1955 on; the Russians had long employed women stewardesses, crew members, and whalers on their factory ships. We learn of the first baby born in the Antarctic (a son named Antarctic, to a Russian stewardess on a whaling factory ship, January 11, 1948) and the first to be born on the Antarctic continent but outside the Antarctic Circle (Emilio Marcos Palma, to Silvia Morello de Palma at the Argentine station Esperanza on the Antarctic Peninsula, January 7, 1978). We learn of the first two women to winter-over on the Continent with the Ronne Expedition (1947-1948), Edith Ronne and Jennie Darlington (though Chipman fails to mention the first baby conceived in Antarctica, the Darlingtons').

Chipman's book, enriched by much material on sub-antarctic island history, also has an index and an impressive, eight-page bibliography attesting to her careful research of both primary and secondary sources. An appendix, "Antarctic Women Speak," contains revealing excerpts from personal recollections of their experiences by 34 modern women who have worked in the Antarctic. This material corresponds to the anecdotal accounts of Barbara Land's *The New Explorers: Women in Antarctica* (Dodd, Mead, 1981) but barely overlaps its subject coverage on just four of the modern women; and Land's book includes only a few pages of the historical information so copiously provided by Chipman, Chipman's account is more scholarly and much more complete than my own article ("It's About Time!" in the *Antarctican Society* bulletin of November 1978). Another particularly useful appendix, "Chronology of Women in the Far South," traces the records of women who have sailed south with their men, worked as captains' wives, mistresses, sailors, whalers, scientists, and been shipwrecked, sometimes drowned.

Though Chipman's book is full of fascinating hints, more detailed accounts would have made it easier reading. However, with the language limitation on source material, such accounts would have given it more imbalance. If there is any fault to be found with this book (other than a few typographical errors), it is that Chipman of necessity

writes from the point-of-view of English-speaking nations; and so proportionately more emphasis is given to achievements of English, Australian, and American women. However, she has called on Spanish-, French-, Danish-, and Russian-language sources wherever available in translation, used reports in English-language texts of activities of women of other nations, and sought out information, some of it admittedly anecdotal, on women whose presence in Antarctica is not noted in historical records.

Many photographs but only one map illustrate the 224-page book. More and better maps would have contributed to the reader's enjoyment and understanding. *Women on the Ice* can be ordered for \$29.44, including postage, from the Australian Book Source, 1309 Redwood Lane, Davis, CA 95616- (916) 753-1519.

(Mildred Rodgers Crary is a novelist, formerly a writer at NSF. She is an occasional book reviewer for this column. She was married to the late Mr. Geophysics of the Antarctic, Bert Crary.)

SOCIETY MEMBER SERVES TIME. Taking a break from the Underwood, we picked up the Health section of the Washington Post for 14 March 1989 and found that one of our members had been locked up. We never really knew anything about Abigail Ailing, as all she put on her application form was "conservation/future." It turns out that Abigail is an understater, as she is involved in Biosphere II, a futuristic, closed ecosystem. Last week she entered the module through an airlock where, for five days, she will live in a sealed environment that generates its own air and rain. The enclosed environment, about the size of a one-car garage, "has the wonderful smell of a rich, tropical rain forest", she told reporters over a videotape hookup. As we understand it, she will monitor systems inside while outside people monitor her inside systems. Don't feel sorry for her, as she will be dining on 2,500 calories per day from 29 types of fruits and vegetables, as well as two aquarium fish that she will kill and eat as part of the test. Abigail must have been the designated pinch hitter, as the Arlington Journal for 3 February indicated that biome design coordinator, Linda Leigh, had been pencilled into the starting lineup for the five-day test.

Biosphere II is going to be a big deal, because in September 1990, four men and four women are going to walk into a 5-million-cubic-foot enclosure, closing the door behind them for two years. They will live and work in a two-and-a-half-acre self-supporting environment that will include seven subcommunities, or biomes: tropical rain forest, savannah, marsh, salt-water ocean, desert, small farm, and human habitat. No polar? Why not? There are fourteen candidates from several countries who are hoping they will be one of the final eight. One might think that these people volunteered to get away from folks like Howard Cosell, but unfortunately this is not so, as they will have telephone, computer and video communications linking them with worldwide networks, access to the AP news service and the latest books on computers, not to mention television, radio, and telecopier. Heck, they could even talk to the folks at the South Pole, should they want to have contact with a polar biome. Four hours a day will be devoted to maintenance, which includes growing and harvesting food and repairing mechanical and electronic devices; another four hours to scientific research. That's eight hours. What about the other 16? Any play? Each biospherian will have a small, two-story apartment, which sort of indicates that the eight finalists (four men, four women) will be singles. Now what happens if some guy gets disoriented while going from the tropical rain forest to the desert, and by some sheer misfortune accidentally crawls into one of the apartments of a woman biospherian and she comes down a bit pregnant? Will all male candidates have vasectomies, or will they grow pills for the women? Probably high tech will protect all parties from such an earthly thing happening, so I guess we shouldn't even think about such a horrid thing.

The purpose of this program is to gain insight into running a future U.S. space station

or a trip to Mars. Biosphere II will have 250 animal species ranging from goats to insects, and 3,800 plant species. Sounds like a nightmare. Who gets to clean out the stable, and what do they do with the stuff? And how does Greenpeace monitor them? A private company in Texas, Space Biospheres Ventures, largely funded by Texas oilman Edward P. Bass, expect the 30-million dollar project to pay for itself in sales of biospheres to government and researchers for space colonization, preservation of endangered species or other projects. Does "other projects" include the South Pole? Imagine having goats and fresh fish at the South Pole, along with your very own tropical rain forest. Maybe we can get Abigail to write something for us about her experience; we certainly will be following the experiment with more than passing interest because of her participation. Even if she doesn't make the final eight, Abigail will be assigned to Mission Control for the two-year closure. Go for it, Double A!

CALL TO QUARTERS FOR VXE-6. VXE-6 is going to hold a big reunion in Point Mugu, California on 26-27 May. We tried to get information for you, calling the contact (OAE Rep, VXE-6, 805-989-7585). The fellow who answered the phone knew nothing about nothing, although he did know there was going to be a reunion. A Lt. Commander was supposed to call us back - he/she did not. But if you want to go to a VXE-6 reunion, contact them yourself at that telephone number, or write to Naval Air Station, OAE Rep, VXE-6, Point Mugu, CA 93042-5014. Good luck!

REQUEST FOR PICTURES OF BERT CRARY. The Ohio State University Press will be publishing the late Bert Crary's book on his polar activities, and Mildred Crary is very much interested in obtaining pictures of Bert which any of you may have taken of him in the Arctic or Antarctic. If they are photos, of high quality, they could very well end up in the book - which Mildred is currently editing. Along with the pictures, she would like a release from the donor saying that the photo could be used in Bert's book. She is also interested in any maps, charts, diagrams, or whatever, that may have an association with Bert. Mildred's address is 3010 New Mexico Avenue, Washington, DC 20016

MORE ON PALMER'S OIL SPILL. We understand that a team of experts have been sent to Palmer to take measurements and analyze samples. They are Michael Fry, bird physiologist from the University of California at Davis; Langdon Quetin and Jeffrey Hyland, marine scientists from the University of California at Santa Barbara; William Stockton, intertidal ecologist, University of California at Santa Cruz; Timothy Targett, fish ecologist, University of Delaware; David Karl, microbiologist, University of Hawaii; Kenneth Dunton, multi-cellular algae specialist from the University of Texas; and Chuck Kennicutt and James Brooks, hydrocarbon chemists from Texas A & M University. They arrived at Palmer on 6 March, and are expected to be there for a month.

We were told that NSF has already put 2.2 million dollars into the recuperation efforts. A figure of 50 million dollars is being bantered around the corridors of NSF as the amount of money it will take to remove all vestiges of the wreck at Palmer. That means that everyone in this country, including babies, will have to dish out between 20 and 25 cents to pay for it. Maybe we shouldn't try to mix brotherhood with science. Leo Durocher, the sage of Ebbets Field, said that good guys finish last. Maybe he knew something!

SOMEONE IS A BUM. We hear that vandals have stolen the plaque from the top of Observation Hill. What kind of an arm hole would do that? Is there no pride in history? I can't imagine anything worse. The culprit should be flogged, then have his/her head shaven like the French did to women who shared their beds with the Germans during World War II, or POWs did to those who stole their Red Cross rations.