



# THE ANTARCTIC SOCIETY

7338 Wayfarer Drive Fairfax  
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**HONORARY PRESIDENT - MRS. PAUL A. SIPLE**

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## BRASH ICE

**Motto: Don't let the truth get in the way of a good story**

Mid-Winter Day has come and gone, and WINFLY will soon be upon us, and before you know it our 47\* year on the ice will be here. How time flies. One who was there in the very beginning, Alison Wilson, has passed away, and Walt Seelig wants to keep her obit on the serious side in keeping with her life style. So be it. But I have to tell one story which the IGY Early Birds will appreciate. Back in 1956 there was no such thing as a big polar shed like NSF, and things were sort of done with bailing wire, scotch tape, and Underwoods. They needed another secretary badly, and who answers the announcement but this gorgeous creature out of the hills of West Virginia. Alison sat there listening to Bert Crary interview her, and as she sashayed out the door, Alison said with great emphasis, "YOU aren't going to hire HER are you?" and Bert's reply was "Hell, yes, she can type ten words per minute!" And so the near legendary Yum Yum came on board, became instantly famous, particularly with the young scientists going through Washington en route to the Antarctic. And Alison kept typing, and typing, and typing still more, long into the nights!

Before anyone yells at me for the above quote from Bert Crary, please let me inform you that Yum Yum herself told me over the phone that it was probably a close approximation to the truth, and not to sweat it. Yum Yum is still a sheer delight to talk to, and she may become a frequent contributor to these pages as sh(esays, "I know a lot of real good stories!" I bet she does, as she hobnobbed with some of the power kings of the IGY. But she had one question of her own, who named a Sno-Cat after her, and where is that cat now? Anyone know? It sounds to me like Blackie Bennett or Wild Bill Cromie, although these are just educated guesses based on associations.

This newsletter has some interesting stuff in it, particularly if you like the melodramatic side of the ice. It seems that doctors who go to the South Pole are predestined for immortality in one way or another and this year has not been an exception. And what happened this winter gave us an excuse to invite our own Charles Swithinbank to personally recall one of the most touching human-interest hero stories ever performed on the ice. Be sure to read all about the clever and nerveless Ove Wilson. It will warm your heart, and make you justly proud of Antarcticans.

This newsletter is basically a collection of articles put together by a cadre of people friendly toward us. The newspaper articles were sent to us by our faithful and loyal buddy, Pete Barretta, who makes these newsletters timely.

## 2003 ANTARCTIC CALENDARS

We hesitated a bit on this calendar, as Hedgehog in New Zealand has been great in the past for keeping people out of the focal length of their cameras, letting the so-called pristine beauty of Antarctica speak for itself. But this year two kayaks sneaked into one picture, plus the bust of Richard E. Byrd at McMurdo. However, the centerfold picture from the top of a mountain overlooking a bay on the Antarctic Peninsula is one of the best shots that we have ever seen. Probably the best centerfold since a soda jerk by the name of Norma Jean made a big splash. We only bought a hundred this year in protest of the kayaks, plus we were getting sick and tired of begging you people to buy the calendars. This is only a nickel and dime operation for us, so really not worth the effort, but for those of you who want the best of the Antarctica calendars, send in your check for \$12 to the Antarctic Society, P.O. Box 325, Port Clyde, ME 04855, and it will be on its way.

## **SOUTH POLE SURGERY VIA SATELLITE (By Frank D. Roylance, *BALTIMORE SUN*, July 19, 2002).**

The repair of a meteorologist's ruptured kneecap on July 5 was the first "telemedicine" surgery ever attempted at the United States' Amundsen Scott South Pole Station. "It went very well, exactly as we planned," says Dr. Bertram Zarins, chief of sports medicine at Massachusetts General Hospital, who supervised the surgery from Boston. The patient - 29 year-old Dar Gibson - is said to be making a full recovery.

Without timely surgery, Gibson faced permanent damage to his knee and a lifetime of limited mobility. Zarins headed a team of physicians enlisted by the National Science Foundation and by Raytheon Polar Services. Their job was to evaluate Gibson's injury and consult with the station's sole doctor, Dr. Timothy Pollard, 46, of Seattle. The team also included Dr. Vicki E. Modest, an anesthesiologist at Massachusetts General. Consulting before the surgery were Drs. Frank J. Frassica and John H. Wilckens at Johns Hopkins Hospital in Baltimore; and Brian A. Smith, a surgeon at the University of Texas Medical Branch at Galveston.

Gibson, from Manchester, Vt, slipped on ice June 28 after taking surface observations outside the station's domed shelter. His left knee was stiffened by minus-90-degree temperatures, and apparently bent too far, separating the tendon that connects the kneecap, or patella, to the lower leg. It can be repaired successfully by suturing the tendon back onto the kneecap, Zarins says, but only "if you operate right away, before the anatomy has changed and the thing is scarred into an abnormal position." Through conference

calls and e-mail exchanges, the consulting team gradually concluded that Pollard had the skills, the drugs and the equipment to perform the surgery safely.

Modest quizzed Pollard about the drugs and the equipment he had. She sent him numerous memos outlining things that could go wrong. She discarded the favored anesthetic approach - an injection into the femoral nerve in the leg. "The femoral nerve is directly next to the femoral artery," she says. A mistake could send the drug into the artery, producing life-threatening seizures and cardiovascular collapse. She and Pollard opted instead for a spinal anesthetic that would numb everything below Gibson's waist. Pollard had performed the procedure several times before. Zarins, meanwhile, gave Pollard a short course in knee repair. "We spent several hours on the telephone, and I explained the procedure in detail and asked him to tell it back to me," he says. "He demonstrated knowledge of the steps involved. He knew what to do."

After a dress rehearsal, a portion of the station's clinic was cleaned and sterilized. Physician's assistant Tom Barale and the station's cook - a former veterinary technician (who was not identified) - scrubbed up to help Pollard. The surgery had to start and finish during the six-hour "window" when the communications satellite was overhead.

Zarins and Modest had a clear, detailed view of the operation. The sound quality from the operating room was spotty, but they managed to converse with Pollard and his patient, who remained conscious. The satellite link was lost several times during the surgery. Each time, contact was quickly re-established using a satellite telephone. Pollard never missed a beat, Modest says. "Even when we were out of communication.... he just continued on." In three hours his work was done. Pollard said his patient is progressing well and has begun physical therapy.

## **A MAN HAS TO DO WHAT A MAN HAS TO DO (by Charles Swithinbank)**

News about an operation at the South Pole to fix a ruptured kneecap reminds me of a hair-raising operation that I witnessed on my first Antarctic expedition (1949-1952). While taking samples, a chip of rock flew into the eye of geologist Alan Reece. Our Swedish physician Ove Wilson consulted a specialist by radio, who advised that Alan's damaged eye must be removed if he were to have any chance of saving the sight of the good eye.

Ove had never witnessed an eye operation but now there was no choice. He set to work preparing a set of instruments for the purpose, modifying some dental tools and making a number

of completely new instruments by filing and polishing pieces of welding wire. We built an operating table out of old boxes and fashioned an oxygen mask out of tractor spares. Then Ove trained his theatre assistants. Photographer Hallgren was chosen as anesthetist and practiced by injecting people with vitamin solutions. Geologist Roots was to assist Ove in the most delicate task of all, actually removing Alan's eye. Glaciologist Schytt was taught the duties of theatre nurse, handing the right instruments to Ove when he called for them. Radio operator Rogstad learned how to monitor blood pressure and muscle reflexes. Meteorologist Liljequist would monitor heart rate and keep records.

Sterility was in insoluble problem. The operating theatre was the open space between rows of cabins in the command hut - a most unsterile place. Aprons and facemasks were made by cutting up sheets which were then sterilized by boiling them in the cook's biggest saucepan. Final preparations looked every bit as professional as a hospital training film. There was a long and thorough scrub-up with nail brushes, soap and boiled water, and then, hands held high, all donned sterile rubber gloves.

I had been briefed to take still and moving pictures, so I was called into the operating theatre at the same time as Alan. Now Alan was strapped to a mattress to restrain any violent reflexes and Hallgren inserted the needle.

Ove's written report says it all: "Slowly but surely Hallgren submerged our patient in ever deeper sleep. My operating knife made the first incision in die pupil. Roots assisted with swift and cool precision, Schytt passed the instruments with absolute assurance, Rogstad followed the blood pressure. Gosta Liljequist kept the records and took the pulse, Hallgren maintained the anesthesia always at the right level. The tension was tremendous. Suddenly I found the first eye muscle, which I retracted by means of my homemade instruments. Directly after, I had severed all the eye muscles. The most dramatic moment came when I was looking for the optic nerve. The only audible sound was the ticking of the film camera in the background. After a while I was able to sever the nerve and take out the eyeball, then tie up the muscles and close the wound."

After two hours and forty minutes of tension, it was all over. Alan was carried to his own bunk and slept. The next day we all visited his cabin to congratulate him on his remarkable courage. Ove too enjoyed universal praise for his masterly management of the surgery. Alan's good eye was now saved, and he later took part in some major inland journeys before returning home the following year. Eventually he acquired a glass eye and recovered his driver's license.

Fourteen years later, while serving as a glaciologist with the Soviet Antarctic Expedition, I told the station physician at Novolazarevskaya of my earlier experience, when the doctor had no choice but to take out a man's eye. He capped that by relating how in 1961

L.I. Rogozov, the doctor at Novolazarevskaya, had taken out his own appendix with the help of a mechanic and a meteorologist. It was a harrowing story. At the time, a blizzard was raging and it was impossible to get medical help from any other station. "The patient" recognized in himself the symptoms of peritonitis. He prepared syringes and instructed his assistants that, if he lost consciousness, they were to use the drugs and administer artificial respiration. Then he propped himself in a semi-reclining position, injected Novocaine, and made the incision. Throughout the operation, one of the assistants had to kneel holding a mirror so that Rogozov could see what he was doing. The doctor developed vertigo after 30-40 minutes and had to pause for rests.

Rogozov later reported that "after resection of the severely diseased vermiform appendix (a 2x2 cm perforation was found at its base), antibiotics were introduced into the peritoneal cavity, and the wound was tightly sutured." The operation took two hours and the patient made a complete recovery.

### **STUCK IN THE ICE (Peter Baker, WASHINGTON POST Foreign Service, WASHINGTON POST, July 21,2002)**

For essentially the entire month of June, a team of Russian scientists trying to get home, along with the crew of the *Magdalena* sent to fetch them, remained trapped at the bottom of the world. Surrounded by walls of ice that its engines were not powerful enough to cut through, the ship was left to the mercy of the elements. Food was running out, electricity rationed. Not until the end of June did rescue arrive, in the form of helicopters that sliced through torturous winds to reach the ship. After recent financial cutbacks, Russia staffs just four of its eight stations on the continent, housing about 90 year-round residents. A similar number joins them during summer months.

The *Magdalena* was not the first ship to become trapped by ice, but this was the first time in years that such a massive rescue operation was undertaken. With the Southern Hemisphere winter fast approaching, the window for leaving was closing when the 74 Russians boarded the ship, with a crew of 33 sailors and pilots, and headed out on May 30. Within hours of their departure from Novolazarevskaya, a coastal station that Russia maintains in Antarctica, the German owned supply ship *Magdalena* became trapped. On one side was the continental ice barrier rising 130 feet into the air: on the other, a frozen ocean and more than a hundred icebergs, some emerging from the water as high as 60 feet and one an estimated 29 miles long. The winds howled and visibility sometimes dropped to zero. The Russians said this year's environment was no worse than usual, but the

*Magdalena* was substituting for their normal icebreaker and simply wasn't up to the task. For 11 days, they were carried along helplessly, unable to maneuver amid floes that pressed up against the vessel - - and unable to find a route out.

At first, crewmembers tried to handle the problem themselves, desperately searching for a way around the ice. After more than a week, on June 7, the Russians said they insisted on checking the food stores, only to learn that they had enough for just three more weeks. They began cutting back at mealtimes but soon ran out of sugar, butter and even bread until they made their own. They also ran out of cigarettes, leaving many of the stranded men all the more on edge.

Perhaps the most tense moment, some said, came on June 11 when they were drifting toward a formation of ice jutting out from the continent. Crewmembers were looking for a break in the ice to steer the ship into Muskegbukta Bay, where they could take haven and wait for rescue. "That was a very critical moment," said V. Martyanov, 50, assistant director of the Russian program and the senior expedition official on the ship. "We had only one chance, perhaps 1 percent chance of succeeding. Fortunately, everything came together. Two weeks earlier or two weeks later, meteorological conditions wouldn't have allowed it, but exactly when we came to that spot, the ice moved apart."

Only then did the *Magdalena* call for help. South Africa dispatched the polar ship *Agulhas* to try its first-ever mid-winter voyage, carrying two long-range Oryx helicopters. The ship got no closer than 185 miles away on June 27 when the helicopters managed to make a single run each to the *Magdalena*, dropping off supplies (cigarettes were unloaded first) and extracting about a dozen men each. Driven back by a storm, the *Agulhas* tried again the next day, this time sending four flights. Martyanov was among the last few taken away on the final two flights on July 1.

A skeletal crew of 17 remained to wait for the Argentine icebreaker *Irizar* to arrive and finally slice the *Magdalena* free. The Russian researchers made their way home to St. Petersburg and Moscow.

After the ship returns to port, an investigation is to examine why it failed to cut through the ice. For Yuri Medunitsin, this would be a triumphant coda to a long, distinguished career in polar expeditions. At 66, the radio operator was the oldest man on the *Magdalena* as he wrapped up its ninth mission. His wife, Irina, 70, was petrified while waiting to learn whether he would make it back. "I don't want him to go again," she said, stroking his arm in their small apartment. "Nine times is enough." And if the Institute call again? Medunitsin smiled. "I'll convince her." More details of this episode can be found on a website from Scott Polar Research Institute, which leads you to additional websites.....

<http://www.spri.cam.ac.uk/wdcc/ship2000.hlm>

## **ALISON WILSON, A BUILDING STONE, CRUMBLES (Walt Seelig and others)**

Mary Alison Wilson (1927 - 2002) was born in Oklahoma on March 19, 1927 but grew up in Washington. In 1955 she began working at the National Academy of Sciences on the IGY program. It was there that her lifelong interest in polar matters started. Her experience there led her to the Polar Archives of the National Archives and Records Service, established in the mid 1960's to preserve records of the U.S. activities in and relating to polar regions. While at the Archives, she was a very important member of a strong polar team of Dr. Herman Friis, Jerry Pagano, and herself. They were not only very helpful to many of us who used the facilities, but were most instrumental in building up the large collection of memorabilia, including journals, of OAEs.

Friends and associates describe Alison as a private person, but most generous with her knowledge and widely recognized as one of the leading experts on polar history. She was particularly adept at locating sources for others to use. Evidence of her expertise is provided by the many, many acknowledgments she received from authors inside and out of government, who cite her assistance in their books and reports. She was associated with National Archives scientific records until she retired in October 1994. Because of her expertise and knowledge of the Antarctic, in 1975 the Secretary of the Interior appointed Alison to the Advisory Committee on Antarctic Names (ACAN), serving first as a member, and, from 1986 to 1993, as the Chairman of ACAN. She was an advisor to the group until her demise. The United States Board on Geographic Names approved the naming of the Antarctic feature Wilson Pass in her honor. Alison passed away at age 75 on June 17, 2002.

## **OTHER DEATHS.**

Tom Osborne, builder and a stalwart member of the first wintering over crew at the South Pole, 1956, recently died following a long bout with cancer. Both station leaders, Dr. Paul A. Siple and Lt. John Tuck, predeceased Tom, but the other fifteen live on. John Eklund, brother of our Founding Father, recently died. Although a newspaper man by profession, he also maintained a deep interest in all polar activities.

**Galen Rowell**, age 61, renowned nature photographer, who wrote **POLES APART: Parallel Visions of the Arctic and Antarctic** (1995), died with his wife Barbara, a friend, and their pilot in an airplane crash as they approached his home Town of Bishop, California, on 11\* of August. He received a grant from NSF in 1992 to travel around Antarctica with

scientists and photograph their activities. One of his more striking photographs was taken inside an ice tower formed from fumaroles at the summit of Mt. Erebus. Galen kindly offered to speak to our Society for his fee of \$4,000, but we reluctantly had to turn him down as this was \$4,000 more than we had ever paid anyone, including Sir Peter Scott.

#### **NORMAN PERSEVERES** (Carolyn Muegge)

Norman is now home! We did go to the cabin and see the fireweed. Had an entourage of 8 including 2 CCU nurses. It was lovely and warm with grand views of the mountain. He did very well - relatively speaking. It was such a treat to be there after 7 months! He has been getting stronger every day and will probably outlive the Energizer bunny! His kidneys are back to normal and liver seems to be fine too! No more pain. He even walks short distances with his walker.

Plus his appetite is back! Recently we drove a couple of hours south of Anchorage to the restaurant where he had his picture taken for the Vanity Fair spread His eyes just gleamed as the lamb chops were brought out. Another beautiful day with an aquamarine glacial-fed lake. Brilliant, blazing pink fireweed lined the road all along the drive. He's anxious to get back to his favorite lunch time hangout, Fletchers. He does still need a lot of assistance and the doctors say his heart is shot - but what do they know... they haven't factored in spirit. His cardiologist said, "He'll probably live to 100 after all and wind up 'relieving' himself on my grave." So he keeps puttering along and enjoys every opportunity he has to get out of the house. I even feel comfortable enough to go back to work as soon as I can find someone to be with him during the day. Maybe the next time you hear from me he'll be getting his wheelchair ready to hookup behind a dog team! Now there's an idea for a new race!

#### **PRINCE OF ASTURIAS AWARD** (Polly Penhale)

The Scientific Committee on Antarctic Research (SCAR) has won a major international award for its contribution to Antarctic science. SCAR is the advisory committee to the Antarctic Treaty and meets every two years to organize international science programs and to provide guidance on science and environmental topics. This year's SCAR meeting was held in July in Shanghai, China and was attended by a U.S. delegation of fifteen from the Office of Polar Programs, NSF and the academic community. Dr. Peter Clarkson, Executive Secretary for SCAR said, "SCAR is deeply honored by this illustrious award that recognizes its contribution to international Antarctic science and cooperation for almost half a century." The Prince of Asturias Award is bestowed annually upon individuals or institutions whose achievements have contributed in a significant way to mutual understanding, progress and brotherhood among nations. HRH Crown Prince Felipe of Spain will present the prize of 50,000 Euros on October 25, 2002 in Oviedo, northern Spain. Bob Rutford will

attend and accept the award. SCAR President Rutford has stepped down, replaced by J. Thiede (Germany).

#### **A REVIEW OF MICHAEL H. ROSOVE'S** **ANTARCTICA, 1772-1922; Freestanding Publications** **Through 1999** (Charles H. Lagerbom)

It was with great excitement I finally got my hands on Michael H. Rosove's new bibliography entitled ANTARCTICA, 1772-1922; Freestanding Publications Through 1999. To any avid south polar book enthusiast, the concept of such a comprehensive listing of all publications related to the classic and heroic ages of Antarctic exploration made one's mouth water, but what seemed to be a dauntingly ambitious if not near-impossible task. Spence, Renard, Conard and other earlier bibliographies had set a pretty high standard in bibliographic completeness, but one which now Michael Rosove has impressively surpassed. With ten years of research, he has produced a masterpiece no doubt destined to become the new standard for Antarctic bibliography with its extensive accounting of just about every published work regarding Antarctic history from Cook to Shackleton. In fact, by early spring of this year I noticed booksellers and libraries had already begun to use Rosove citations in their catalogs and databases. Furthermore, knowing that Antarctic bibliography does not remain static, the author has invited comments, corrections and contributions for a future "Additions and Corrections" supplement.

Rosove developed a four-tiered-hierarchy for his classification system to ensure a sense of consistency for the numerous variety of freestanding publications. Thus, with only a few items that might otherwise prove difficult to classify, his approach hugely succeeds by neatly categorizing most works and simplifying the burden for any reader, researcher, or collector. In Section I, he uses "Entry" to denote all published forms of a single work or body of work; "Group" for editions and printings that are very closely related; "Number" for each edition within a group; and "Variant" for differences in binding, edges, endpapers and so on. Section II is a 25 page comprehensive listing of other Antarctic titles with brief descriptions numbered 1000-1355. An included 25-page index is also very helpful. The result is a format that one can easily make use of and navigate. With this in mind, the true wealth of information and depth of details of Rosove's research becomes readily apparent.

The book, produced as a numbered edition of five hundred copies, was printed on high quality acid-free paper, has been Smyth-sewn and measures 29 cm. It is hefty with 537 quality pages and 10 plate leaves (5 of which are color). All copies of the book are signed on the limitation leaf by the author. The

SI 50 price is a great bargain for the amount of material and its wealth of details. It is available from Adelie Books, Santa Monica, California. ISBN 0-9705386-OX. This book will appeal to anyone interested in the history of pre-modern Antarctica and deserves a place on every south polar enthusiast's shelf.

### **NO ANTHRAX IN THEM THAR STABLES (Nicola Holmes, New Zealand Antarctic Institute)**

Speculation was raised last month that live anthrax spores were in the stables at Scott's hut at Cape Evans, Antarctica after University of Waikato scientists initial molecular tests indicated a positive reaction with probes to anthrax DNA.

The National Center for Disease Investigation followed up with further testing. NCDI director Dr. Hugh Davies, said NCDI tests failed to isolate anthrax in the samples they tested. Anthrax was not isolated from any of the six samples (of which four had shown a positive reaction with anthrax DNA probes) provided to them by University of Waikato scientists.

It is possible that there is a kind of fetish about digging around in stables and latrines at the bases of early explorers. George Meyer and others sampled latrines in 1961 at early camps on Ross Island, and analyzed them for organisms. Several kinds of viable organisms were found, and after thawing, there was no doubt that the investigators had truly found the latrines. George published his momentous work in the Canadian Journal of Microbiology (1963), for those readers who have a similar fetish. If you remember George from his presence at McMurdo in about 1960 or so, you might recall that somehow it all falls together. And now, George, it might be anthrax... what next?

### **PENGUINS IN ALASKA?**

We all know that penguins are found only in the Southern Hemisphere, except for the species in the Galapagos Islands on the Equator, right? Well, not all penguins (17 species) read those bits of trivia, as one of them, a Humboldt penguin normally found off the coast of Peru and northern Chile, apparently made its way across the Equator (eating what???), and was found by a fisherman in his net off southeast Alaska, west of Ketchikan. The penguin was hauled aboard, it appeared to be healthy and robust, was photographed, and returned to the sea. Penguin specialist Dr. Dee Boersma, University of Washington, Seattle, commented on this unusual find, and suggested that it might have been transported by boat. Dee's specialty, by the way, and a result of her Ph.D. Degree at Ohio State University, is the Galapagos penguin, so she knows a Humboldt when she sees one in a photo. Anyone else can attribute this to global warming, El Nino peculiarities, and other buzzwords... or just a plain, lost penguin. More at <http://www.adn.com/front/story/1516491p-1633674c.html> (front page story in Anchorage newspaper).

### **RAY ARNAUDO OF THE US STATE DEPARTMENT WRITES ABOUT SECRETARIAT (not the horse).**

The Antarctic Treaty continues to move towards establishing a Secretariat. It was agreed to do so at the 16<sup>th</sup> Antarctic Treaty Consultative Meeting (ATCM) several years ago, but no consensus had been reached on the location. At last year's annual meeting in St. Petersburg, all Parties agreed to setting up a small, cost-effective secretariat in Buenos Aires. The Argentine Government hosted an informal meeting this past June to begin planning and drafting of the various necessary documents, such as staff regulations, a headquarters agreement, financial arrangements, etc. They have also offered to establish a temporary facility until all governments act officially and the Secretariat is up and running. Further action will be one of the main topics at the upcoming ATCM in Warsaw. The other big issue of the Warsaw meeting will be the Liability Annex. The Chair of the Drafting Group, New Zealand's Ambassador Don MacKay, will be circulating a re-draft of his latest attempt to bridge differences between the US proposal and the old text, which had seen little progress over the past few years.

Environmental Protocol: Annex V of the Protocol, which covers protected areas in Antarctica, has finally entered into force. India, the last country to approve the Annex, informed the US, the Treaty Depository, that its Government had taken appropriate steps to ratify the last Annex. The Protocol and the other four annexes came into force in January 1998.

### **NATIONAL ICE CORE LABORATORY (NICL) RECOGNIZED (Julie Palais)**

The National Science Foundation (NSF) and the United States Geological Survey (USGS) jointly manage and operate the National Ice Core Laboratory (NICL) in Lakewood, Colorado. This facility has proven to be vitally important for researchers from the ice core community. NICL not only provides a state of the art ice core processing area for investigators to conduct research funded by NSF and the USGS but also have the ability to maintain the integrity of ice core archives by providing a safe and controlled environment to preserve ice cores for future researchers. These ice cores provide the basis for our current understanding of climate change on both long time scales and short time scales (i.e. abrupt climate change).

A National Research Council (NRC) panel visited numerous geoscience archival centers, including NICL, in the past year to address the problems with archiving of various types of cores (i.e. rock, sediment, ice). Their report "*Geoscience Data and Collections: National Resources in*

*Peril*" which came out in April mentioned NICL as an example of a "success story" in an article in *Science* (v. 297, p. 181) on the challenges in storage of geological information: The article said, "There are a few success stories. The NRC panel holds up the National Ice Core Laboratory (NICL) in Lakewood, Colorado, as a model facility. Funded by USGS and the National Science Foundation, the lab has a Web-based catalog, well-documented cores, and a clear policy for removing materials from the collection so that little core is wasted." The NRC committee also recommended that the government fund three new centers.....modeled after NICL to house core and other material.

## **ANTARCTIC AUTOMATIC WEATHER STATIONS 1980 TO 2002 (Chuck Stearns, U. Wise.)**

### Part 1. History and Installation

The National Science Foundations Office of Polar Programs funds the placement of automatic weather station (AWS) units in remote areas in Antarctica in support of meteorological research, applications and operations. The basic AWS units measure air temperature, wind speed and direction at a nominal height of 3 meters above the surface. Air pressure is measured at the height of the electronics' enclosure. Some units measure relative humidity at 3 meters above the surface and the air temperature difference between .5 and 3 meters above the surface at the time of installation. The data was collected by the ARGOS Data Collection System (DCS) on board the National Oceanic and Atmospheric Administration (NOAA) series of polar-orbiting satellites.

The AWS unit was designed and initially constructed and deployed under the direction of Prof. Peterson of Stanford University and turned over to Charles Stearns at the University of Wisconsin in the summer of 1980. The AWS units are located in arrays for specific proposals and at other sites for operational purposes. Any one AWS may support several experiments and all support operational meteorological services for weather forecasts for aircraft flights.

We did not see an AWS until we got to McMurdo during November of 1980. We found that we did not know anything about computers, digital electronics, machine language programming or anything else related to the system we had passed on to us. By the second year we were starting to understand the system. By the third year we were starting to modify the system. We also found out that the Stanford programming was not always correct. By the fourth year we had doubled the amount of data the AWS could collect including snow temperatures, relative humidity, and the vertical air temperature difference.

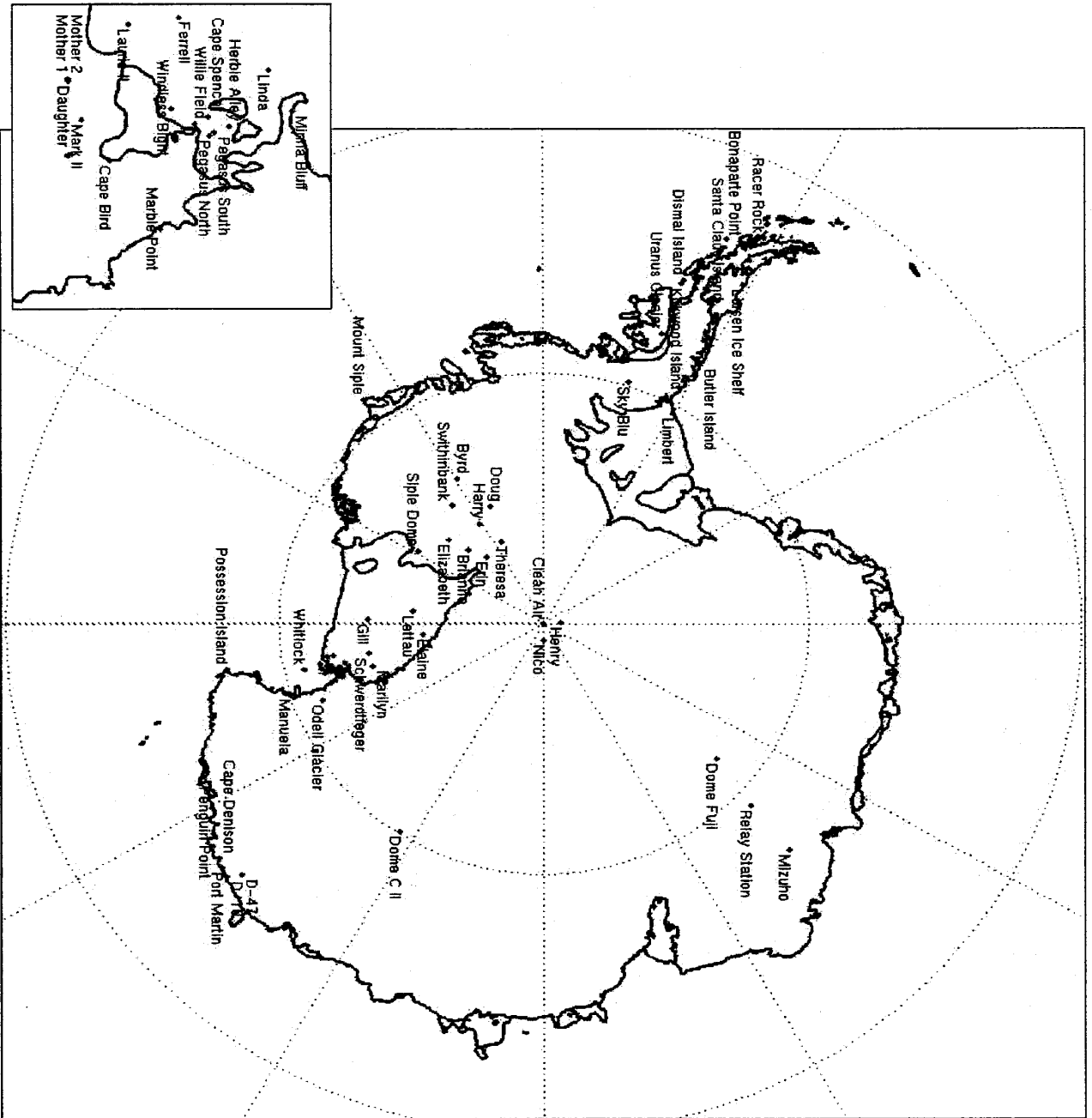
The Ross Ice Shelf lacks features that are named and can be used to designate the AWS location. In the table the units along the Adelie coast are named after the location or the designation of the sites based on traverses by the French who take care of these units. The units

that have female first names are usually children, wives, and numerous girl friends all of which have passed out of the scene. Linda works with us, Gill is the female pilot in command of the LC-130 that landed at the site, Manuela worked for us, and Elaine was one of the secretaries in the department office. Henry, Harry, Doug, and J.C. were the Win Otter aircraft group, and a great help to us. The sites with last names such as Swithinbank, Limbert, Lettau, and Schwerdtfeger are people who have been active in Antarctic research and are particularly important to us. Whitlock was a navy meteorologist who volunteered to install the AWS on Franklin Island while leaving Antarctica on the icebreaker. We never heard from his again and we do not know if he is aware of the great honor that has been bestowed upon him by us. The unit operated for many years.

Upon arrival at McMurdo for the first field season the only work space was in the cages of the USARP cargo building next to the Berg Field Center. We did not try to do a lot of work on the AWS units other than to prepare the units for the helo flights for installations. The second year we were going to make changes and needed a place to work that was clean, well lit, quiet, with all the characteristics needed of a high tech laboratory for working on fussy electronics. What we got was a dirty cage in the USARP cargo building with the doors opening to let in Boris, the front-end loader. This guaranteed that anything in our minds was erased instantly and would not be replaced before Boris would come in the doors again. During the second year we discovered that the aerovanes used for wind speed and direction had a pinched wire that would break and we would not have wind speed data. We rebuilt every aerovane we had except for the pieces that fell between the floorboards of the cages and we could not reach.

On the reverse site of this sheet, you will find a map provided by Chuck Stearns of all the 2002 Antarctic automatic weather stations. Mother 1, Mother 2, and Daughter are GPS units placed on iceberg B-15A, and Mark 2 is another GPS on iceberg C-16. Strictly for tracking purposes.

### **Part H, "PROBLEMS" IN NEXT NEWSLETTER.**



**ANTARCTIC AUTOMATIC WEATHER STATIONS**