



THE ANTARCTICAN SOCIETY

NEWSLETTER

HONORARY PRESIDENT - RUTH J. SIPLE

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BRASH ICE. The Antarctic Society needs a rejuvenation shot as more of us are dying of old age than are being bred into the Society. As most of you know, we started out in 1960, following the IGY, 1957-58, and were more or less a good Old Boys Club in Washington, DC. Now we are coming up on another International Polar Year, 2007-2008, and we are going to have a new station at the South Pole to serve as its centerpiece. We have made contacts with many of the younger generation working in Antarctica, and we are beginning to have a feel for these people and what they are doing on the ice. Believe me, it's a totally new era. South Pole people are finding out who they are, thanks to Bill Spindler and Katy Jensen, who have been doing some high-powered arithmetic. Believe it or not, over a thousand people have wintered at the South Pole, including one who wintered five times. Another, Drew Logan, who lives not too far from where we put these newsletters together, may even have more months at the South Pole than anyone else. Meanwhile, a habitual summer research scientist at the South Pole since 1960, Marty Pomerantz, is coming out with what amounts to his autobiography. But the nature of our Society is going to rest with the younger people, so wish us luck.

This newsletter has a concluding report on the infamous mid-May storm at McMurdo which we covered in some detail in our last newsletter, an account by Matthew Lazzara, Linda Keller, and Arthur Cayette at the University of Wisconsin. This issue presents an analysis of the storm as interpreted by the very well known Antarctic meteorologist, David H. Bromwich, and one of his graduate students, Michelle Lambertson. Enjoy. Good news came out of New Zealand in late October when it was revealed that an inspection of the historic huts at Cape Evans and at Cape Royds suffered little or no damage from the storm which wrecked havoc on both the US and New Zealand stations on McMurdo Sound.

With this Newsletter, we are introducing someone whom we hope will become a frequent contributor to these pages, Katy Jensen of Minnesota and the Antarctic, although probably it should be Antarctica and Minnesota, as she has wintered over three times at the South Pole (her husband has wintered over four times). Please be sure to read her really great profile on Dr. Will Silva, a most interesting person who we had the pleasure and honor of meeting hi person last spring when Drew and Diana Logan brought him to our redoubt in midcoastal Maine.

CALENDARS. It is that time of the year to inform you that we have a deal for you, the best Antarctic calendar on the street, the product of Colin and "Smiles" Monteath of Hedgehog House in New Zealand. The cost of shipping went up considerably, well over a dollar per calendar, but we are offering you these calendars at a bargain rate of only \$13.00 each. We did not order what we consider extras this year, so we shouldn't come begging for you to buy later this fall. However, if you order now, beating the holiday rush, we can mail immediately as we have already received our shipment. One of the very best is by one of our favorite photographers, Robert Schwarz of Germany, who has wintered frequently whiter at the South Pole and takes fantastic pictures of the aurora. This year he has a photo with the new South Pole Station hi the foreground. This is one of the very best calendars that the Monteaths have ever put out, so get on the bandwagon and make someone happy with a beautiful calendar. Mail your checks, made out to the Antarctic Society, to the Antarctic Society, P.O. Box 325, Port Clyde, ME 04855.

THE RUTH J. SIPLE MEMORIAL FUND. As you may recall, our Society has established a Fund in the name of Ruth, with an overall aim of supplying books for the South Pole library, hopefully in a library dedicated to her. Many of you have responded handsomely, and we have approximately \$1500 already in the till. Many of the checks have been for \$50 and \$100, and we are going to reward each of the big contributors with an extension of their membership, a year extension for each \$50.00 contribution. Ann Siple Johnson, the eldest of the Siple girls, acknowledges each donation, and the other two daughters, Jane DeWitt and Mary Cathrin Branon, are informed by yours truly. So far we have heard from such well known Antarcticans as Dick Chappell, Ron Taylor, George Toney, Bob Benson, Anne Benninghoff, Joe Dukert, Pat Wilson, Chester Pierce, Walt Seelig, George Watson, Bob Dale, John Spletstoeser, Art Ford, Tom Frostman, Ken Moulton, Bob Newcomb, and Fauno Cordes, as well as several lesser known penguins. Keep the Fund growing, as a reliable source at NSF tells us that our proposal is still on the board.

POLLY PENHALE BECOMES ENVIRONMENTALLY SOUND. (NSF Release.) Antarctic Society member Dr. Polly A. Penhale has been named to the new position of Environmental Officer in the Office of Polar Programs, effective September 19, 2004. As such, Dr. Penhale will have overall responsibility for implementing, overseeing, and evaluating the incorporation of environmental policies and procedures related to environmental management, monitoring, protection and conservation in polar regions. She will have overall responsibility for oversight of OPP research activities from an environmental perspective that provides appropriate protection and stewardship of the environment, working with OPP staff in all three Sections. In addition, Dr. Penhale will represent the United States in the International Convention for the Conservation of Antarctic Marine and Living Resources, and in the Committee on Environmental Protection of the Antarctic Treaty. Dr. Penhale will report to the Director, OPP, in discharging these important responsibilities. For the near term Dr. Penhale will be dual-hatted, continuing her work with the Antarctic Biology and Medicine Program while NSF conducts a search for her successor. She will report to the Section Head, Antarctic Sciences when working in that capacity. Polly has been a great asset to the Antarctic Society, and a frequent contributor to the Newsletter, informing us of news within the NSF network.

THE TRUE TEST OF AN ANEMOMETER. (Michelle Lambertson and David H. Bromwich, Polar Meteorology Group, Byrd Polar Research Center, The Ohio State University.) The mid-May 2004 storm that rocked McMurdo has piqued the curiosity of weather aficionados everywhere.

An intense synoptic-scale low developed to the north of West Antarctica, tracked across Marie Byrd Land and the Ross Ice Shelf and then turned northward along the Transantarctic Mountains. (See Figure 1 for a geographic layout of the region.) The most stunning feature of this storm is the particularly strong pressure gradient that set up east of the Transantarctic Mountains and the ensuing extreme wind speeds recorded near McMurdo Station.

As the low moved across the Ross Ice Shelf the central pressure was recorded at 946 millibars. Such low pressure was not observed in the immediate vicinity of Ross Island, however, since the low stalled temporarily to the southeast of Ross Island. See Figure 2 for a regional picture of the location of the low pressure system near Ross Island at 1800 GMT (6 pm Greenwich Mean Time, 12 hours behind local time) on 15 May. Strong pressure rises (around 12 millibars) were recorded farther to the west between Ross Island and Minna Bluff to the south between 1500 GMT and 2100 GMT on 15 May. The resulting strong east-west pressure gradient, constrained by the Transantarctic Mountains to the west, is most assuredly responsible for the dramatic southerly wind event that followed.

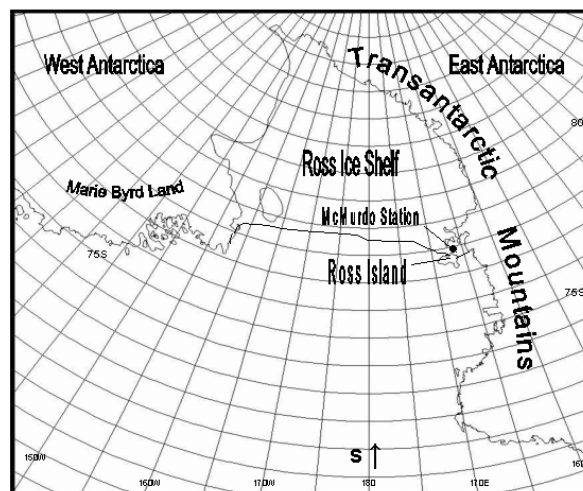


Figure 1. Geographic layout of the greater Ross Ice Shelf

Beginning at 1730 GMT 15 May wind speeds in excess of 115 mph were recorded at Black Island, just to the south of Ross Island. A peak wind speed of 144 mph was recorded there at 2015 GMT. (See Figure 3.) Just to put into perspective the sheer power of this storm, from Black Island south to the summit of Minna Bluff, hurricane force winds in excess of 100 mph dominated the McMurdo region until 0000 GMT 16 May. (see figure 2, page 3)

One of the few anemometers (wind speed detectors) near McMurdo still operational after the onset of the storm, Williams Field, continued packing near-hurricane force winds for several more hours.

The Antarctic Mesoscale Prediction System (AMPS), a joint effort between the National Center for Atmospheric Research and the Byrd Polar Research Center (BPRC) of The Ohio State University, routinely provides weather forecasts in support of aircraft operations at McMurdo Station. AMPS employs a mesoscale atmospheric model (Polar MM5) adapted specifically for the polar regions by the Polar Meteorology Group at BPRC. Initial analyses reveal a credible forecast by AMPS for this extreme event. Figure 4 illustrates the mean sea level pressure forecast from AMPS versus the automatic weather station (AWS) observations at Williams Field close to McMurdo Station. AMPS impressively captured the significant decrease in pressure associated with the approach of the storm with only a small error in timing.

Curiosity certainly sparks an interest in understanding this dynamic situation. It is quite apparent that this was not a typical event that unleashed itself on the McMurdo region – even for the harsh conditions in Antarctica.

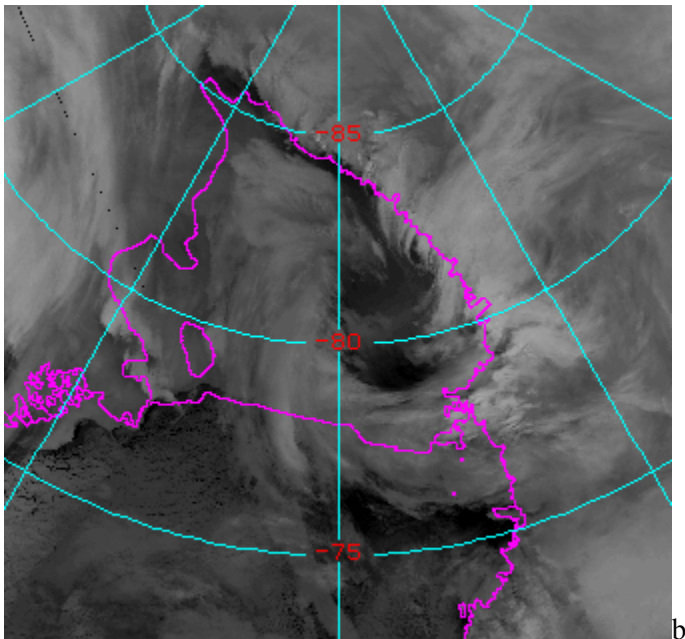


Figure 2. Infrared satellite photograph for the Ross Island region at 1800 GMT, 15 May 2004.

The forecast and observed pressure rose strongly in conjunction with the intense winds, illustrating the complexity of this event. Figures 5 and 6, respectively, show the predicted wind speed and direction in relation to the observations. The overall wind behavior (especially the direction) is well captured by the model, although the speed is notably underestimated during the strongest winds. In general, the winds are the most difficult aspects for numerical models to represent because of the very localized factors affecting their behavior. This event will be used to develop and test methods designed to improve the forecast skill of AMPS; of greatest interest here is the effective use of the vast amount and variety of satellite data.

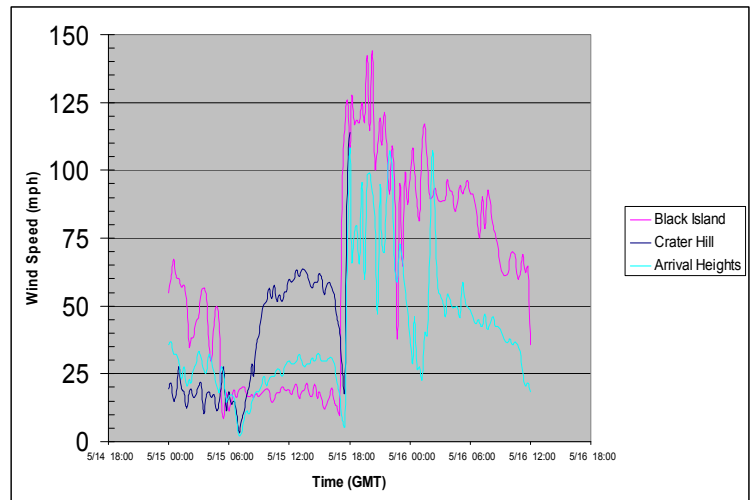


Figure 3. Wind speeds recorded at Black Island, Crater Hill and Arrival Heights.

ANTARCTIC 'SEEING' (Margaret Lanyon/Christchurch Press) The best place on earth to watch the stars is one of the planet's most remote and barren locations: an Antarctic plateau that offers views bettered only by the Hubble Space Telescope. Stargazing conditions at the Dome C Antarctic research station, where temperatures are minus 54deg, are so good that telescopes become up to three times more powerful than similar models used at warmer latitudes. Research by an Australian team of scientists suggests that a permanent telescope there would become the most powerful ground-based observatory ever built, even if it were significantly smaller and cheaper than those already operating in Hawaii, Chile and the Canary Islands. Such an instrument would be capable of taking images almost as (continued on page 5)

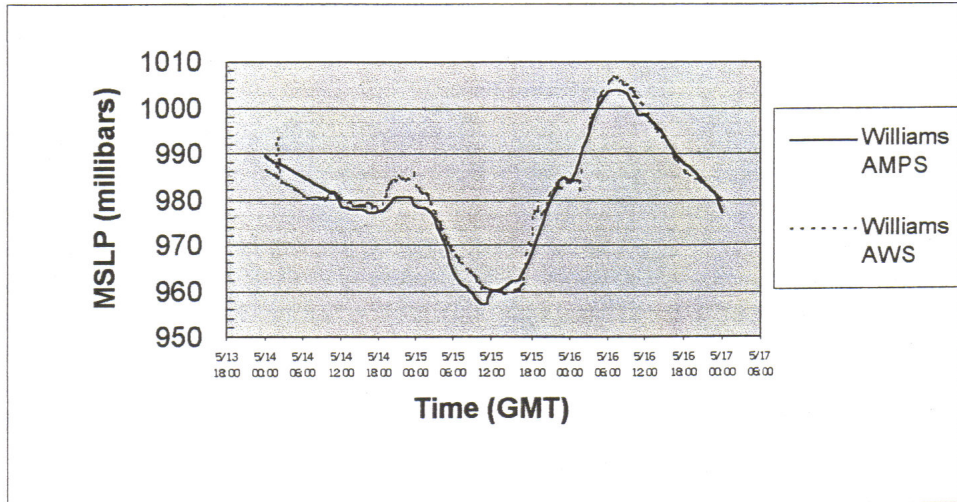


Figure 4. AMPS forecast for mean sea level pressure (MSLP) versus automatic weather station (AWS) data at Williams

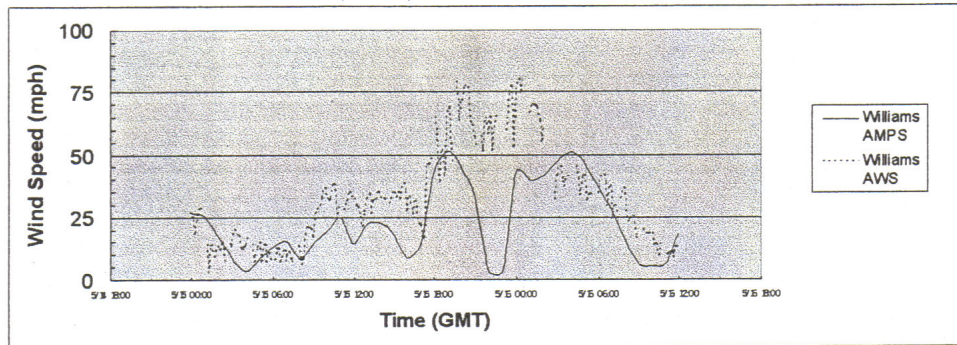


Figure 5. AMPS forecast for wind speed versus automatic weather station (AWS) observations at Williams Field.

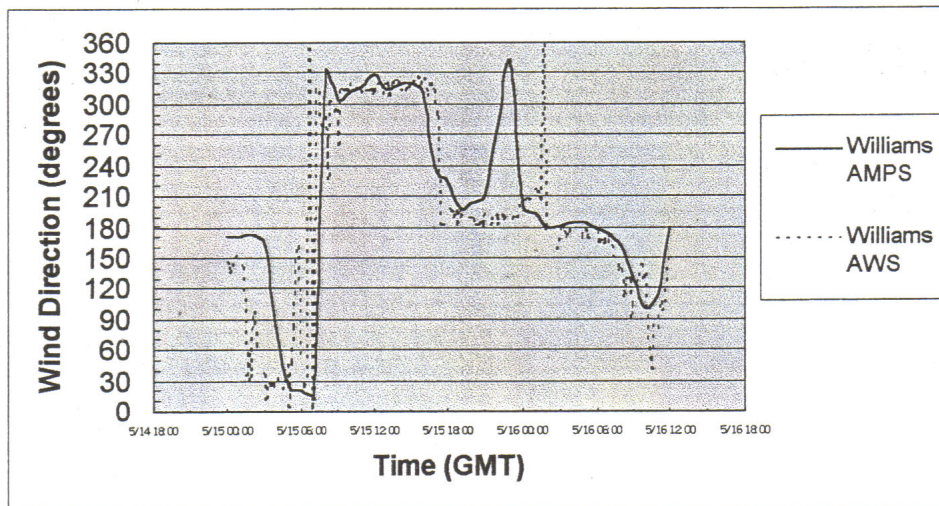


Figure 6. AMPS forecast for wind direction versus automatic weather station (AWS) data at Williams Field.

sharp as those from Hubble, at a fraction of the cost, and would provide the best possible alternative to the ageing space telescope when it is scrapped, which could happen as soon as 2007.

Dr. Michael Ashley, of the University of New South Wales, who led the research, says an antarctic telescope would promise an astronomy revolution. "It represents arguably the most dramatic breakthrough in the potential for ground-based optical astronomy since the invention of the telescope," he says. "The discovery means that a telescope at Dome C could compete with a telescope two to three times larger at the mid-latitude observatories, with major cost-saving implications. "Dome C could become an important test-bed for experiments and technologies that will later be flown on space missions. Indeed, for some projects, the site might be an attractive alternative to space-based astronomy."

The most critical criterion for placing ground-based telescopes is a site with good "seeing" - calm atmospheric conditions through which light can travel with minimal interference. Interference from turbulent air is what makes stars appear to twinkle when seen from Earth - they do not twinkle when seen in the vacuum of space - and this effect can ruin the observations of astronomers. Most existing big observatories are sited at high elevations, which tend to have clear and dark skies. Ashley's team worked out that the Antarctic plateau had atmospheric conditions that should be even better. It is one of the coldest and driest places on earth, making the atmosphere exceptionally calm. Previous research at the U. S. Amundsen-Scott South Pole station, which lies on the plateau, has shown "seeing" at the pole itself to be rather poor. Dome C, a base operated jointly by the French and Italian Antarctic research organisations, is 3250m above sea level and 1100km from the sea, higher and further inland than the South Pole.

COFFEE-TABLE BOOKS. The SMITHSONIAN September 2004 issue had an eight- page spread on the photography of Rosemarie and Pat Keough's ANTARCTICA published by Nahanni Productions several years ago, which we cited at the time in one of our newsletters. This book probably caused more excitement in the art world than it did in Antarctic circles, as it was a work of art of the very highest quality, but its price of \$3000 (Amazon.com) sort of put it beyond the reach of most Antarcticans who do not have that deep a pocket or prefer to spend their dollars more prudently. There were only 950 books put together, so it is a very limited edition. All books are bound entirely by hand in fine goat leather and presented in a sturdy linen and velvet archival box. The photos are reproduced on luxurious, heavy paper using light-fast pigment and the world's highest resolution lithography. Not

exactly something to enjoy in a tent while out in the field, holed up by a blizzard, although it would be a wonderful conversation piece. It has collected 21 awards for photography and craftsmanship.

This book with 345 plates showing scenes from the subantarctic islands to all accessible locations via Master card or Visa were shot in two austral summers, those of 1999-2001. One noted Antarctic bemoans the fact that this wonderful book is almost entirely devoid of people, although to many of the rest of us, the so-referenced pristine continent's beauty stands on its own merit without habitation by intrepid scientists, their supporting arms, tourists, adventurers, and plain wanderers.

The first coffee-table book of any note during this Modern Era was ANTARCTICA by the eminent Swiss photographer, Emil Schulthess, published in 1960. For its time, a very important time as it included coverage of the reintroduction of science into Antarctica, one could say it was the benchmark into coffee-table books on Antarctica.

There hasn't been a real proliferation of all-purpose Antarctic coffee-table books, but there are enough for us to more or less make an effort to score those on our coffee table, although it turned out to be completely useless. Each one seemed to have many unusual pictures of great individual merit, with the sum of their parts seemingly constituting far more than the whole. It all boils down to our individual tastes. But we do want to mention two which we feel you all should own, Colin Monteath's ANTARCTIC published by Baron's Educational Series in 1997, and Frank Todd's ANTARCTIC SPLENDOR, by Hancock House Publishers in 1993. Both are GREAT.

But it seems like now we are in a period where coffee-table books are more specialized. There always have been photographers out there who want to market their pictures of penguins. The one which this writer particularly likes is Frans Lanting's PENGUIN, published in Japan by Taschen in 1999. I put my money where my heart was, buying *six* for presents for special friends. Recently our newsletter has reviewed Jim Mastro's ANTARCTICA, published by Bulfinch in 2002, and Bill Green's and Craig Potton's IMPROBABLE EDEN, The Dry Valleys of Antarctica, published by Craig Potton himself in 2003. Jim's book has a strong appeal to real Antarcticans, especially to those who have wintered over, as it includes many great pictures taken during the Antarctic night, which you would never find in any other book. With this newsletter, we are reviewing another of the specialized coffee-table Antarctic books,

Norbert Wu's UNDER ANTARCTIC ICE, published by the University of California Press just this past summer.

UNDER ANTARCTIC ICE, The Photographs of Norbert

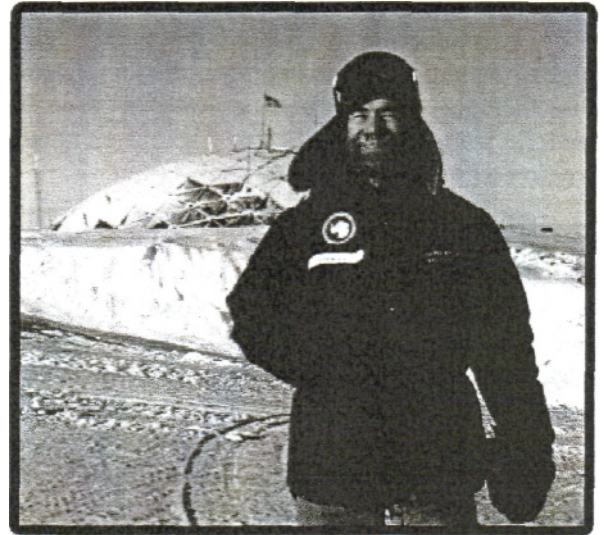
Wu. (University of California Press, 2004, 177 pages.) This excellent book is actually a by-product of two distinguished Antarcticans, the prime author, Norbert Wu, and Jim Mastro. One of Norbert's acknowledgments is priceless and no doubt truthful, a rarity not always found in acknowledgments. It reads "My wonderful parents, Dr. James and Mei Wu, have always supported me and my wild dreams and deserve acclaim for bringing up a difficult child. My wife, Deanna Mah, deserves kudos for putting up with the same."

When you review a book, I think you are indebted to the public to find something wrong so that the reader thinks you are a qualified reviewer. So to establish this falsehood, we did find something wrong, although it was the cartographer's fault. On the map of Antarctica (p. 2), the Filchner Ice Shelf became Finchler, and Amundsen Sea became Asmundsen. The other map (p. 12), of McMurdo Sound, has four errors on it, and we leave it up to you to find them. The ice shelf was actually discovered on the German Antarctic Expedition, 1912, led by Wilhelm Filchner. He named it after Kaiser Wilhelm, who in turn requested that it be named after the real discoverer.

This is one of the very best coffee-table Antarctic books ever printed, as it combines some outstanding underwater photography with science, truly a wedding of science with great photography. If you can't read or don't want to read, you can surely enjoy the photography. In a totally unsolicited endorsement, we are going to draw upon, without the author's permit, what penguinologist David Ainley e-mailed Bill Sladen on 19 September 2004 September. It read, "I want to tell you about a coffee-table book by Norbert Wu, "Under the Antarctic Ice", that just appeared and is a celebration of the McMurdo Sound and the southern Ross Sea ecosystem. It's one of the few such books or popular publications about the Antarctic neritic ecosystem. Of course, it is full of great pictures of the photogenic stuff, from cetaceans to fish to various benthic organisms. The text, too, is very well informed, which it should be, given the 40 years of marine research in McMurdo Sound and vicinity. The book comes at a time when we need to be more aware about what we could lose, before it is gone, should fishery pressure continue to mount." And here is another fine endorsement from another Antarctic penguinologist, Gerald Kooyman, author of DIVERSE DIVERS, PHYSIOLOGY AND BEHAVIOR, who heartily endorsed Wu's book, "With its exceptional photographs and lucid text, this book is about as close as you can come to visiting Antarctica without actually going there."

So how can you lose? You can't. And Norbert has a special deal for you all. You can get a personally inscribed copy of his book by spending a very small sum, only \$45.95 (less than the cost of two steaks at your local Outback restaurant) to Norbert Wu Productions, 1065 Sinex Ave., Pacific Grove, CA 93950. Be sure to indicate whom you would like the book signed to. If you have any questions, call Mike Ready at Norbert Wu Productions, (619) 299-3395.

PROFILE OF AN ANTARCTICAN: WILL SILVA (Katy Jensen)



Ask Will Silva, MD what compels him to return to Antarctica year after year, and you'll see a familiar smile. "I love my job," he says. "It's a privilege to be in a position where I can help my community, and contribute to my nation's Antarctic research program."

Will has spent the last seven years balancing his time between contracts on the Ice and climbing mountains, hiking, and skiing all over the world. His passions—the four points of his compass—are music, mountains, medicine, and relationships. He tries to maintain a balance of all four.

Will grew up in a house full of music. His mother had a master's degree in piano from the Yale School of Music, and the family radio was usually tuned to WQXR, a NYC classical music station they could receive at home in New Haven, Connecticut. Will began to study violin when he was six, and though his interest has waxed and waned over the years, he says, "I always bring a fiddle to the Ice."

His passion for the mountains developed while he was in college. Though his parents had taught their children to ski a little, it wasn't until his sophomore year at Harvard that Will "cut [his] hair, sold the motorcycle, and got into backpacking." Soon the backpacking became winter camping, then ice climbing...and within nine months he was headed for the Yukon with his ice axe and crampons.

Will's wilderness experiences taught him how to anticipate and avoid problems. Climbing demanded a situational awareness that was quite different from life in a civilized zone, and he learned the importance of teamwork and trust.

Will graduated from the University of Rochester School of Medicine, and after his residency at Boston City Hospital, he worked as an emergency room doctor in a busy hospital near Boston. But he missed the continuity of knowing what became of his patients, and he soon moved west to Seattle to become a primary care internist. This was his passion...the work he had set out to do. "It was stressful, but I loved it."

But gradually, things changed. Health care in the U.S. was becoming less of a service and more of an industry. He says, "developing a therapeutic relationship with your patients takes time. But financial constraints were limiting the time spent with each patient." After a while, he was expected to think of patients not as people but as "units of production," and there was always pressure to become "more productive."

It all came to a head in the summer of '97, when two uncomfortable nights spent in an Alaskan snow cave gave him plenty of time to think about his situation. Will knew he had to get out of the clinic but he didn't know how. That's when serendipity stepped in: his sister told him about an ad in the *New England Journal of Medicine* that read, "Doctors wanted for Antarctic Research Stations." Will dusted off his resume and applied for the job. After fourteen years at the clinic this was a daunting proposition, but he discovered that the thought of quitting his clinic job and moving on to something more constructive "brought a sense of joy and optimism" he hadn't felt in years.

Will jokes about that first tour at Pole being the solution to his 'mid-life crisis,' but it has become more of a second career. He enjoys working at all three USAP stations because they're each so different. Palmer has the critters, and the boats, and the myriad shades of blue. The Pole is compelling, exotic, and otherworldly. McMurdo is more interesting medically because more people = more work, and "Mac General" has a whole team of medical professionals with whom to share ideas.

To stay prepared, Will constantly runs "fire drills" in his head, asking himself, "What if...? What if a patient presents with appendicitis or an ectopic pregnancy, requiring immediate surgery?" This is what inspired his "MED SURG 101" course, for which he handpicks a team of volunteers from the station crew and teaches them everything from communicating and working as a team to setting up an operating room, creating a sterile field, understanding how medications are packaged and administered, handling medical tools and equipment, and monitoring a patient's condition.

Each time he returns to the Ice, Will sees improvements in the station medical facilities. "Back in '97 we were just starting to talk about video-teleconferencing. Now we're doing it." Raytheon's and NSF's interest in improving Antarctic medical services, and the support of an MD Medical Director at RPSC's Denver headquarters has made a big difference. When Will first started with the program, he had to learn how to develop and interpret wet-film x-rays on his own. Now he can e-mail digital x-ray or ultrasound images to a radiologist in the United States for interpretation. Improved equipment and a formalized consulting arrangement with the University of Texas at Galveston have greatly enhanced the stations' medical capabilities.

Even so, there are challenges. Any time someone gets really sick, or seriously hurt, it's up to the station physician to make some tough decisions. If transportation is available, is it better to treat the person on site with limited care, or to request a medevac, during which resources will be even more limited? It's a balancing act, and even having a team of expert consultants on the telephone doesn't make the decision easy.

When asked what advice he might offer, he says, "Work hard and master whatever you choose to do." At the same time, he stresses that it's important not to be monomaniacal about your job. Being a doctor is only a part of who he is...he works hard to improve his medical skills but he enjoys doing other things too. He aspires to the liberal arts model of the scholar athlete—the well-rounded soul.

Throughout his life, Will seems to have made his choices based on the types of people he hoped to spend time with. He chose Harvard because there would be "bright and interesting kids" there, and he enjoys working in Antarctica because "Ice people tend to be intelligent, highly-motivated, versatile individuals." A friend once referred to Antarctica as "a penal colony on an ice planet." Will says that all depends on one's attitude, and boss, and colleagues. With

the right relationships in place, it's no prison but rather, "A very funny Utopia." Relationships, the fourth point of his compass, form the structure that shapes his experiences and makes them all worthwhile.

Will Silva's Antarctic timeline: 97-98
South Pole summer & winter 99-00
Palmer summer & winter 01-02
McMurdo summer 02-03 South Pole
summer & winter 04-05 Palmer
summer

THE NEVER ENDING ISSUE. As it was in the beginning, is now and ever shall be, is Antarctica in a stable state or is it melting away? It was an issue when Byrd and Gould went to the ice back in the 1920s, it was an issue when Crary, Bentley, and Siple went in the IGY, and all you have to do now is read the NATIONAL GEOGRAPHIC of September 2004 or the NEW YORK TIMES of September 24* to know that some people are worrying about the future of New Orleans. Andrew C. Revkin wrote in the TIMES that some of the Antarctic glaciers have been spurred by warming of coastal air and waters, and that ocean levels might be irreversibly on the rise for centuries to come. Oh, my!

Richard Alley, our Memorial Lecturer in 2001, was quoted as saying in the TIMES that there was cause for concern, justifying a much more intensive survey of the world's thawing places. I think he was telling the government to keep funding him and Alley's Allies. Richard went on to actually say that there could be a short-term rise in sea level that would stop as new fringing ice shelves eventually put the brakes on the glaciers. But it was also possible that conditions would set off "complete or near-complete collapse over centuries or millennia", guaranteeing a flooding of coastlines far into the future.

P.S. A word to the wise. If any of you own any real estate on the eastern side of the Antarctic Peninsula, you had better put it up for sale on eBay. That's a particularly high risk area now, ever since the Larsen Ice Shelf started disintegrating several seasons ago.

PENGUINS AT CAPE CROZIER - A STORY OF HOW IT BEGAN. (Dr. W.J.L. 'Bill' Sladen) There is no argument about how and when the study on the Adelie penguin colony at Cape Crozier, Ross Island, began. Bill Sladen was a gift to the U.S. from U.K., where he distinguished himself with not just a Ph.D. (Oxford) with studies of Adelies at Hope Bay and Signy Island with the Falkland Islands Dependencies Survey (FEDS) in the 1940s, but also earned an M.D. and was medical officer.

Bill became instrumental for the location for his Johns Hopkins University penguin study at Cape Crozier, which included, over the years, "a wonderful set of mostly PhD and Masters students including Bob Wood, Richard Penney, Bob LeResche, Roberto Schlatter, Bill Emerson, John Boyd and, of course later, Dave Ainley, who endured the storms, enjoyed the research there and reveled in the rare days when the weather was clear and calm." Together, they banded thousands of penguins, resulting in numerous data that showed everything from arrival at the breeding site in spring to nest occupations. Bill has provided a complimentary review of a book by Dave Ainley, which, depending on your karma about penguins, is an interesting read and a vital part of your polar book collection. A wonderful tribute to Bill comes from Dave Ainley's book:

"To Bill Sladen, who had one foot on the heroic side of Antarctic exploration the other in the modern scientific side. It was his passion and thirst for knowledge that helped to lead us into the modern age on Antarctic ornithology". His review has been modified from one that was published in **BioScience - September 2004 / Vol. 54 No. 9.**

THE ADELIE PENGUIN: BELLWETHER OF CLIMATE CHANGE. David G. Ainley (illustrations by Lucia deLeiris). Columbia University Press, 2002. 310 pp. \$59.50 (ISBN: 0-231-12306-X cloth).

To those of us Antarcticans, the Adelie Penguin is one of the most appealing creatures of the South Polar regions. It is also amongst the most studied of all bird species. Dave Ainley, one of my former Johns Hopkins PhD students, brings it all together in a delightfully written volume that is certain to please the amateur birder, the polar traveler and the most serious academic ornithologist. It is also very readable, updating the out of print book that Ainley et al. (1983) published 11 years ago.

A study area at the Cape Crozier, Ross Island, Adelie Penguin colony of about 300,000 birds was selected in 1959 for our Johns Hopkins University team when I was sailing on the icebreaker *USS Stolen Island*. A few birds were flipper-banded at that time. Subsequently, up to 5,000 juvenile penguins were flipper-banded each year (1960-70) to build up a population of known-aged birds. Ainley inherited most of this population when they were reaching up to 8 years of age and did a magnificent job in analyzing the data and moving the research forward to what it is now, one of the most important long-term avian population studies. He will shortly be leaving (2004-05) for his 26th visit to Antarctica and the Southern Ocean.

The book's title is meaningful. Definitions give bellwether as, 'a wether or male sheep that leads the flock, usually bearing a belt, or 'something that takes the lead'; e.g. 'Paris remains the bellwether of the fashion industry. Climate change does not change overnight. Thus, the title is a good one. Something that justifies continued long-term research on Ross Island, Antarctica where a simple ecosystem prevails.

Acknowledgments are followed by eight chapters. 1. *Introduction* presents an extremely thorough coverage of the early research on the Adelie's natural history. The book is worth its price for this chapter alone, as well as chapter 2. *Marine Ecology* which summarizes the bird's marine ecology and much new information from areas of research that have seen much progress since Ainley (et al.1983). For example, the development and miniaturization of high-tech equipment to study diving and foraging behavior and from advances in genetic differentiation of populations that comes from the dating of penguin bones in extinct and extant colonies. Chapter 3. *Breeding Populations*, listing every known Adelie colony, summarizes the geographic, size and distribution of its colonies. Chapter 4. *The Annual Cycle* covers the basic chronology of nesting and population dynamics and the molt. Chapters 5 and 6, covering the *Occupation and Reoccupation Periods* add material from Ainley (et al.1983) presenting it in context with additional material from other researchers. These are useful chapters for the professional ornithologist. Chapter 7. *Predation* emphasizes that of the three listed, killer whale, leopard seal and skua, the leopard seal is the only really significant predator. The skua is a scavenger and mostly predares fish at sea. Chapter 8. *Demography* updates Ainley (et al.1983). An important conclusion is reached that flipper bands, the basis of our earlier studies, induced a small mortality during the first year after banding (as one might expect), but not thereafter. Chapter 9. *The Bellwether of Climate Change* comes to grips with the book's title, offering some fascinating hints on how Adelie populations may change in the future. Ainley details the way in which the Adelie natural history patterns have evolved hi relation to sea ice cover at various times of the season. In relation to global warming, I was hoping to learn more about the increase in Chinstrap Penguins at the expense of the Adelie along the Antarctic Peninsula. The Chinstrap breeds one month later; nests on steeper slopes; usually molts on land (instead of in the pack) and is more dependent on open water (Sladen 1955). I found some interesting comparisons in chapter 6 but not in 9.

The art by Lucia deLeiris is superb and could have easily displaced the rather poor photographic reproductions that, out of the many thousands that must have accumulated in 40 plus years, should have all been outstanding. Substituting a hard

back photographic cover for a paper cover was excellent but again the photos displayed could have been more relevant to the book title. My only other complaint is the inconvenience of each chapter having separate bibliographies. Of the 560 total references listed, many are duplicated. One bibliography would have been easier to use.

I cannot resist quoting a section of Ainley's introduction when he so eloquently describes the Adelie coming ashore, as I have so many times witnessed and filmed on the beaches of Cape Crozier:

"I have always been amazed at the vivid change in demeanor each time an Adelie comes ashore. The act takes incomparable athleticism. It's as if the penguin knows that all the cards are stacked against it, if not this time then certainly the next; if not the leopard seal, then huge waves; if not heaving blocks of ice then an icefoot necessitating a leap of two or more meters. The penguin lands ashore in a bad mood, exasperated and seemingly oblivious to what the beach has to offer. Then as it shakes the water from its feathers its awareness of the colony and of purpose seems to take over. It is only then that the penguin completes the transformation from marine to terrestrial creature. Off it goes, unquestioning and unvarying, sometimes even muttering almost inaudible renditions of calls it will use to greet its mate or chicks."

A final word about long-term bird population studies which this book exemplifies. Five decades ago it was the amateur independent individuals like Richdale (1957) (Yellow-eyed Penguins and Royal Albatross) and Margaret Nice (Song Sparrow) that led the way. It took a great deal of persuading government agencies to sustain long-term funding for the biological sciences, as they willingly did for the physical sciences. For example, you cannot spend millions of dollars on a telescope and then abandon it after a few years. Two projects that I was privileged to help activate — Lance Tickell's PhD albatross study on Bird Island, South Georgia in 1958 and ours, also Johns Hopkins, study at Cape Crozier in 1961— fortunately have so far survived: but not without some early gaps due to lack of funding. The albatross research continues under the watchful eyes of John Croxall, British Antarctic Survey, and, as presented in this book, the Adelie research continues under Ainley.

Both of these birds are in trouble. The ice, home for the Adelie, is diminishing. The Wandering Albatross, a bird that has evolved to mature at over ten years, lays only one egg, boasts a breeding cycle of 18 months and once abundant is now becoming endangered because of environmentally

unsound commercial fishing methods. Banding studies have shown that many birds are longer lived than we thought. A Wandering Albatross has been recovered at age 41; a Laysan Albatross, when rebanded in 2002, was 51 years old. One of our Cape Crozier South Polar Skuas reached the age of 38 in 2003. All these are long distance travelers.

Dave Ainley, if it had not been for you the mass of data we all helped to collect during the early days of our Crozier study (Ainley et al. 1983) would have never seen print. Now you have done it again. Jolly good show. Keep up the good work and be sure to enthuse young researchers to continue your work as you age. Long-term population studies should continue with all the support they need.

References cited

Ainley DG, LeResche LE, Sladen WJL. 1983. Breeding Biology of the Adelie Penguin. Univ. Calif. Richdale LE. 1957. A Population Study of Penguins. Oxford. Sladen WJL. 1955. Some aspects of the behaviour of Adelie and Chinstrap Penguins. ACTA XI Congressus Internationalis Ornithologica, Basel, pp.241-247.

POLAR CASTAWAYS: The Ross Sea Party (1914-17) of Sir Ernest Shackleton by Richard McElrea and David Harrowfield Canterbury Univ. Press 2004 (Reviewed by Steve Dibbern) This book is a long overdue analysis of the overlooked portion of the Imperial Transantarctic Expedition led so famously by Sir Ernest Shackleton. This was the part that was so tragically led from afar by remote orders and was uniquely successful in its endeavor but lost its leader and two others in its success.

The story is enhanced by the availability of diaries which were unedited as so many were for publication of popular debt reducing books at the time. Thus we are allowed to hear of the perception that there was a prejudice against the Australian and New Zealanders in favor of the less physically fit (and possibly less intelligent) British members appointed by Shackleton. Certainly Mackintosh (the leader) takes quite a beating and a high level of anger was expressed by the survivors after his death. They felt that they (the australasians) had worked so hard to save his life only for him to throw it away on the obviously thin ice of McMurdo Sound and to take Hayward with him!

The veracity of some of Joyce's leadership claims in his 1920s book also comes in for some critical examination. Other previously under reported subjects were the mental state of many of the participants. Several deteriorated to hermit status and worse. The level of uncertainty after the shin was swept

away and the three deaths on the Southern Party led to such levels of depression in some that they ceased to function.

Another interesting section concerns the treatment of Stenhouse after the Aurora's survival. It is a tail of intra-expedition intrigue, backstabbing and governmental takeover. The book is fascinating to the student of that period of Antarctic history and is a strong cautionary tale of how not to run an enterprise. For all of the laudatory volumes currently extant on Shackleton's prowess as a leader, this was the expedition that he ignored in detail and maybe led badly by weak appointments.

It is well researched, well written by McElrea and very well illustrated by David Harrowfield with previously unpublished photographs. Aside from the photos, Harrowfield has also made a fine contribution of a number of excellent maps which made it easy for the reader to keep track of the narrative's multiple parties. A very good book on a long under-examined expedition. The only successful expedition Shackleton ever led, but also the only one that lost men.

(PS: POLAR RECORD, V.40, No. 214, July 2004, p 278 includes a review of the book by R.W. Richards, THE ROSS SEA PARTY, 1914-17, 2nd ed. 2003)

SEQUEL TO THE SLEEPING BAG - EAST IS WEST.

(Art Ford.) In a tongue-twister similar to Herbert Ponting's "Sleeping Bag", where there is some dispute as to whether to use the sleeping bag with the fur side inside or outside, Art has offered the following:

"In parts of East Antarctica West Antarctica is east, in others west. This, of course depends on whether you are in east East Antarctica, or west. However, if you are in west West Antarctica, East Antarctica is west unless you want to go to west East Antarctica in which case it is east. The same holds for east West Antarctica only in reverse except that if you want to go to west East Antarctica, you still go east. No wonder we don't know what we found!"

[From a volume of Leg 28 of the Deep Sea Drilling Project (DSDP) of the Glomar Challenger, in the Ross Sea, the first ocean-floor drilling in Antarctica, in 1972-3, on which Art was one of the geologists.]