



# THE ANTARCTICAN SOCIETY

905 NORTH JACKSONVILLE STREET  
ARLINGTON, VIRGINIA 22205

HONORARY PRESIDENT — MRS. PAUL A. SIPLE

Vol. 94-95

November

No. 2

**Presidents:**

Dr. Carl R. Eklund, 1959-61  
Dr. Paul A. Siple, 1961-62  
Mr. Gordon D. Cartwright, 1962-63  
RADM David M. Tyree (Ret.), 1963-64  
Mr. George R. Toney, 1964-65  
Mr. Morton J. Rubin, 1965-66  
Dr. Albert P. Crary, 1966-68  
Dr. Henry M. Dater, 1968-70  
Mr. George A. Doumani, 1970-71  
Dr. William J. L. Sladen, 1971-73  
Mr. Peter F. Bermel, 1973-75  
Dr. Kenneth J. Bertrand, 1975-77  
Mrs. Paul A. Siple, 1977-78  
Dr. Paul C. Dalrymple, 1978-80  
Dr. Meredith F. Burrill, 1980-82  
Dr. Mort D. Turner, 1982-84  
Dr. Edward P. Todd, 1984-86  
Mr. Robert H. T. Dodson, 1986-88  
Dr. Robert H. Rutford, 1988-90  
Mr. Guy G. Guthridge, 1990-92  
Dr. Polly A. Penhale, 1992-94

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**Paul C. Daniels**

**Memorial Lecturers:**

Dr. William J. L. Sladen, 1964  
RADM David M. Tyree (Ret.), 1965  
Dr. Roger Tory Peterson, 1966  
Dr. J. Campbell Craddock, 1967  
Mr. James Pranke, 1968  
Dr. Henry M. Dater, 1970  
Sir Peter M. Scott, 1971  
Dr. Frank Davies, 1972  
Mr. Scott McVay, 1973  
Mr. Joseph O. Fletcher, 1974  
Mr. Herman R. Friis, 1975  
Dr. Kenneth J. Bertrand, 1976  
Dr. William J. L. Sladen, 1977  
Dr. J. Murray Mitchell, Jr., 1978  
Dr. Laurence McKinley Gould, 1979  
Dr. Charles R. Bentley, 1980  
Dr. Robert L. Nichols, 1981  
Dr. Robert H. Rutford, 1982  
Mr. R. Tucker Scully, 1983  
Dr. Richard P. Goldthwait, 1984  
Dr. Mark F. Meier, 1985  
Dr. Claude Lorius, 1986  
Dr. Louis J. Lanzerotti, 1987  
Mr. Peter J. Anderson, 1988  
Dr. Ted E. DeLaca, 1989  
Dr. Sayed Z. El-Sayed, 1990  
Dr. Charles W. Swithinbank, 1991  
Dr. Susan Solomon, 1992  
Dr. Michele E. Raney, 1993

OUR 1994 PAUL C. DANIELS MEMORIAL LECTURE

Joint Meeting with The Explorers Club - Washington Group  
and The Society of Woman Geographers

Astrophysics at the South Pole

by

Dr. Doyle A. (Al) Harper Director,  
Center for Astrophysical Research  
in Antarctica Yerkes Observatory

on

Saturday evening, December 10, 1994

at

The Cosmos Club

2121 Massachusetts Avenue, NW

Social Hour 6 PM - Dinner 7 PM - Lecture 8:15 PM

The cost of dinner, including tax and gratuity, is \$33/person.

Club rules preclude having a cash bar, so drinks must be ordered and paid for when you send in your dinner reservation. Each drink: Liquor - \$4.25, Beer - \$3.25, Wine - \$2.75, Sodas - \$1.75. Make check (dinner & drinks) payable to Explorers Club-Wash.Group, and send to Ms. Marcia Halliday, P.O. Box 2321, Reston, VA 22090 (daytime phone: 703-818-4667) by December 3rd.

Dress will be black tie, or dark suit, if you prefer.

Dr. Al Harper has been Director of the Center for Astrophysical Research in Antarctica (CARA) since 1991. The high South Polar Plateau is an excellent place to do infrared work - best on the surface of the earth - because most of the water vapor is frozen out of the polar atmosphere. Scientists have recently begun several major initiatives to capitalize on the unique atmospheric, climatic, and geographical advantages of the site for astrophysical experiments. If these ventures are successful, Antarctic telescopes may become premier tools for a broad range of earth-based astronomical observations during the twenty-first century.

A new monster has surfaced in recent years which will depersonalize these Newsletters while at the same time will saturate you all with facts, and that is the utilization of Guy Guthridge's e-mail file. Taradiddling would become a thing of the past; begging for news items would be passe; there would be no more calls to Link Washburn pleading for a heartrending obituary of some beloved polar scientist; biased book reviews would not be written by some prejudiced soul; and tales of the Antarctic would only be spun at bull sessions.

But there is at least one Antarctic, a former roommate of mine at Little America V in 1957, who is a program manager at the National Science Foundation, who is fighting e-mail. He feels in his work that it is much more important to have the personal touch of communication with his subjects. He equates e-mail with the interstate highway system and the use of condoms, where one loses touch with reality.

I feel that we are at a crossroad with these Newsletters. For the time being we will probably go with a mix of e-mail plus taradiddling. If you, the readers, like e-mail, we can make these things all e-mail. Until then, read the Newsletters with caution, as we will continue to strive to make sure the truth doesn't in any way get into the substance of a real good story.

**CALENDARS AND MEMBERSHIPS.** The 1995 Colin Monteath Hedgehog Antarctic calendar is just fantastic, and our price is ridiculously low. We have only a limited number, so if you want one, better order now, as we will take what's left to the next meeting and unload, freeing Ruth for Christmas activities. Ten bucks by mail, nine dollars by hand.

Our membership has stabilized at around 600, which is a good neighborhood to be in. As we go to press, we have around a hundred delinquent for this year, which isn't bad, since we haven't sent out second notices yet. Two-thirds of those who have renewed have done so for multiple years, which sure helps out on the bookkeeping and billing. Thank you, thank you, thank you!

**ELLE TRACY IS IN THE ON-DECK CIRCLE.** Your next Newsletter will be written by a former contract employee of ASA, Elle Tracy of Seattle, Washington, who wintered over at McMurdo in 1992. During the austral summer of 1991-92 she wrote a column, "Scientific Souls and Sun Dogs" for the weekly military newspaper; edited and published thirteen issues of *THE DARK STAR*, the winter-over newspaper for the station. Elle is interested in writing for the Antarctic Society, and because Yours Truly will be historian on one of the Antarctic cruise ships for five cruises early in 1995, we accepted her invitation to write and told her to crank out the next one.

I think you will find her both refreshing and interesting. She is planning to write an Antarctic book, entirely different from any written to date. On her way back from the ice she studied her way through the New Zealand libraries, South Australian libraries, and spent several months at the Scott Polar Research Institute in Cambridge. She is one of the few American women who has gone to SPRI and not been conscripted by Brother Stonehouse for an advance graduate degree on tourism and the Antarctic environment. That makes her real unique. She has been exposed to Charles Swithinbank,

Colin Bull, and John Splettstoesser, and is still interested in Antarctica, so she is a real hardy soul. In spite of her unbinding love for Antarctica, she does NOT want to go back to the ice, which is impossible to believe. We told Elle that the ball was in her court, that she could dribble it, pass it, or shoot it, do anything she wanted.

**PROPOSING U.S. STAMP FOR DR. PAUL A. SIPLE** (John Lenkey III). During the course of fund-raising for the restoration of the Richard E. Byrd Memorial in Wellington, New Zealand, John Lenkey III of Midlothian, Virginia came to the conclusion that the late Dr. Paul A. Siple was "the most effective Antarctic of all."

On October 1, 1994, Mr. Lenkey contacted the Citizen Stamp Advisory Committee of the U.S. Postal Service for directions on how to proceed. Members who wish to second the motion to have a stamp for Dr. Siple should send letters of endorsement to Mr. Lenkey (Mr. John Lenkey III, Siple Stamp Committee, 2121 Castlebridge Road, Midlothian, VA 23113).

**AN APPRECIATION OF PAUL A. SIPLE** (by Robert F. Benson of Goddard Space Flight Center, Greenbelt, MD 20771) in *BOS, TRANSACTIONS, AMERICAN GEOPHYSICAL UNION*, Vol. 75, Number 31, August 2, 1994, pages 355, 361. (Bob Benson was a wintering-over scientist with Siple at the South Pole.) We are republishing parts of Bob's longer article in memory of Paul's recently departed sister, Carrol Kettering, for whom Paul once named a geographic feature sighted on the U.S. Antarctic Service Expedition.

At 19, Eagle Scout Paul Siple, at 6'1" and 167 pounds, with 60 merit badges, was selected in a highly publicized contest from among thousands of Boy Scout applicants to participate in the first Byrd Antarctic Expedition (1928-1930). This expedition took place just 16 years after the race between Amundsen and Scott for the South Pole. It was the first of 4 winters and 10 summers that Siple would spend in Antarctica. On this first expedition, he performed a wide variety of tasks in addition to serving as taxidermist—he brought a collection of seals, penguins and flying birds to the American Museum of Natural History of New York.

He returned to Allegheny College, in Meadville, Penn., where he completed his B.S. in 1932, gave many lectures, and wrote his first book describing his adventures in Antarctica. This book provided some welcome financial support—though he gained invaluable experience in Antarctica, he received only a symbolic \$1 in financial compensation.

On the second Byrd Antarctic Expedition (1933-1935) Siple was chief biologist, in charge of equipping Admiral Byrd's Advance Base where Byrd would remain alone for 5 months, and led a 3-month dog-sledding party into unexplored regions

In 1939, between the second and third expeditions, Siple earned his Ph.D. in geography from Clark University. After the third expedition, he was asked to act as an expert cold weather clothing designer for the U.S. Army, which led him to accept a commission in the Army Quartermaster Corps.

The "wind chill temperature," a common term used in daily weather reporting on cold winter days, has its origin in the "Wind Chill Index" specifically designed for Antarctic conditions, which was introduced in Siple's 1939 Ph.D. dissertation. It was developed to simplify the complicated formulas for expressing the relative comfort scales of different weather conditions. The motivation for this goal came from experience gained by Paul Siple during the first two Byrd Antarctic expeditions. As stated by Siple and C.F. Passel in 1945: "Perhaps there is no place on Earth where one is so acutely aware of the need for a

suitable scale to express sensible temperatures as the polar regions. Here there is striking contrast between relatively tolerable days of calm, subzero weather, and windy days that are warmer although sensibly much more unpleasant."

The wind chill index was refined based on research carried out during Siple's third expedition to Antarctica from 1939 to 1941. During that expedition, he was geographer and supervisor of supplies for the U.S. Antarctic Service (USAS), leader of West Base, and navigator and principal geographic observer on all West Base exploration flights. His wind chill work at that time, with Charles Passel, was based on measurements made in "unconfined atmosphere under condition of freezing temperature and darkness."

In addition to determining cooling rates from the time required for water to freeze and give off its latent heat of fusion, experiments were performed to determine human physical endurance for exposed flesh under various wind conditions during subfreezing temperatures. This work also contributed to his classic guide about the proper clothing for "large numbers of inexperienced men being taken into polar or other cold-climate regions," and led to new designs of cold weather gear such as the cold weather parka and the basic insulated boot, which was the basis for one of his eight patents.

Because of the experience gained from three wintering-over expeditions with Admiral Byrd in Antarctica, Siple was asked to return to Antarctica on several key assignments. He went as senior War Department observer during the Navy's Operation High Jump (1946-1947), and during Deep Freeze I (1955-1956) he served in two capacities, as director of scientific projects for Task Force 43 and as deputy to Admiral Byrd. Finally, after pleading requests from Larry Gould, Hugh Odishaw, and Admiral Byrd, he accepted the challenging role as leader of the first wintering-over party of 18 men at the Amundsen-Scott South Pole Station during the IGY. Admiral Byrd told Siple that if he were not satisfied that it was safe to live there, he would have the authority to call off the operation. So, once again Siple had to leave his supportive wife Ruth and daughters Ann, Jane, and Mary for more than a year, while he applied his professional talents to Antarctica. This time, it was to establish a manned presence at the geographic South Pole. He was the overall station leader, and John Tuck Jr. was in charge of the Navy support personnel. The two formed an ideal leadership team that made the first winter at the South Pole one of the great success stories of the IGY.

His leadership and organizational skills quickly became evident during that first winter at the South Pole. Siple led his coworkers in performing the many difficult tasks necessary to prepare the station for the dark 6-month winter when temperatures were typically between  $-60^{\circ}$  and  $-80^{\circ}$ F with a wind. He was almost always the first to dig into the many outdoor projects to be completed before sunset, and the last to come in out of the cold. It was difficult for a station member to complain about the cold working conditions when Siple—many years their senior—was outperforming them.

He cheerfully took his turn at hauling trash, cleaning floors, digging snow for our water supply, and kitchen duties. He refused to buckle under the demands to show a movie every night, arguing that the limited supply of films, while plentiful, would lead to massive reruns at the end of our stay when morale problems could become greatest. Instead, he instituted a series of seminars by station members and lectures on medical topics by our station physician.

In addition to their leadership roles, both Siple and Tuck spent many hours during the winter night taking star shots to determine the precise location of the Amundsen-Scott Station relative to the geographic spin pole. This effort

was closely related to a major interest that Siple had in the motion of the poles. Like Alfred Wegener, recognized author of the continental drift hypothesis, Siple was convinced that many terrestrial geographic and geological features could not be explained by the accepted geological dogma of the day. In particular, he was a firm believer that the existence of coal beds in polar regions could not be explained by global climatic changes. He devised experiments involving the motions of small magnets on a spinning metal sphere in the basement of his home in Arlington, Virginia to test his view that forests and swamps once existed in Antarctica due to polar wandering in addition to the movements of the continents.

After returning from Antarctica, Siple resumed his role as special advisor to the director of Army Research, wrote a book describing the first winter of the Amundsen-Scott South Pole Station and the history leading up to it, and was elected the second president of The Antarctic Society. He later accepted a position as the first U.S. Scientific Attach<sup>e</sup> to Australia and New Zealand, where he was instrumental in strengthening ties between scientists in all fields. He died in 1968 at 59 after struggling for more than two years to keep working despite partial paralysis resulting from a stroke. In addition to the numerous honors he received—including a cover picture on *Time Magazine*, in 1956—an Antarctic station was dedicated in his honor.

**NORMAN VAUGHAN SEEKS DIVINE SUPPORT AS HE ASSAULTS HIS OWN MOUNTAIN.** Everything is on GO, as we go to press, for Norman Vaughan to leave Alaska on 16 November to start the 1994 Mt. Vaughan Antarctic Expedition. Leaving no stones unturned, he appeared on Robert Schuller's Sunday morning "Hour of Power" in September. There is no question that Norman doesn't need any inspirational motivation. In fact, he could write a book on motivation. But if the Lord was listening that morning, if He was moved, perhaps He will show Norman the way to the top on his 89th birthday.

Norman made a swing through Maine in early November, and we heard him speak at the College of the Atlantic in Bar Harbor, Maine. He was all charged up like a thoroughbred racing horse, just waiting to burst through the starting gates. His supporting team is thin in numbers, consisting of his 52-year old bride, Carolyn Muegge-Vaughan, and a veteran Seven Summitter, Vernon Tejas, age 41. If need be, it will fall on Vernon to backpack Norman to the summit, as dogs are no longer part of Norman's life-support system in Antarctica.

There will also be an official photographer, Gordon Wiltsie, a guide from Adventure Network International (ANI), and a film crew from National Geographic Television. The expedition will leave Punta Arenas on an ANI C-130 on 22 November, flying, hopefully, the 1750 miles to Patriot Hills, where they will set up their base camp. A week later they will fly 750 miles in a Twin Otter to the base of Mt. Vaughan. A DC-3 supply plane will also accompany them. If all goes well, they will have a birthday celebration on the summit of Mt. Vaughan on 19 December, then return to Punta Arenas and the States within ten days.

Expedition updates will be sent frequently via the Prodigy Services, which is sponsoring on-line communications through a feature called "Mountain Challenge." If you are interested in being on-line with e-mail to get daily updates, send them your e-mail address.

Norman has no idea at all how old he really is, as no self-respecting man of 89 would even consider doing what Norman is contemplating. Norman says, "Age is not a factor in the pursuit of dreams and lofty goals. No challenge is too great at any time within a person's life. This effort will serve as a symbol of vitality to people in their senior years that it's possible to live younger, longer." That's

all sort of a sophisticated way of saying what another immortal, Satchel Paige, once said, "Don't turn around, as someone might be gaining on you."

There's no one behind you, Norman, you are out there all by yourself, you vs. the environment, and we'll just have to wait and see who wins out. But you have already defied so many odds by doing so many crazy impossible dreams that we aren't going to lay any money in Las Vegas against your making it.

5fou folks are all going to have a chance to meet and hear Norman when he comes back, as he is so deep in a financial hole that he's going to have to lecture for the rest of his life in order to pay off his debtors. But the guy is a good speaker, very entertaining, and is sort of the Rip Van Winkle of the Antarctic, having been there in 1928-30, 1978, and now 1993-94. And wouldn't you pay to hear Rip? Imagine being in Antarctica covering a span of 65 years, and having a 52-year old bride who supposedly is happy with your antics? Truly a miracle man.

**BEWARE OF SOFT SHOULDERS - BARRY CHAPMAN BISHOP IS DEAD AT AGE 62.** As old Norman goes to his destiny climbing Mt. Vaughan, a very famous mountaineer who had some Antarctic blood in his veins met his destiny in a single-car accident on the soft shoulders of a road near Pocatello, Idaho, on 24 September. Barry served in the Antarctic Projects Office of the U.S. Air Force from 1955 through 1958, working as a scientific adviser to the late Admiral Richard E. Byrd. He also was the official U.S. observer on the Argentine Antarctic Expedition in 1956-57.

Barry got a real head start climbing mountains, as he made his first ascent (Mt. Mitchell, North Carolina, 6,684 feet) at age three, riding piggyback on his father's back. Twenty-eight years later, on 22 May 1963, he made it to the top of Mt. Everest. It was a costly victory, as he lost his toes and part of two fingers to frostbite. His son Brent successfully climbed Everest last May, making them the only American father and son to achieve the top of the world. Barry, along with his wife Lila, were on their way from their retirement home in Bozeman, Montana to San Francisco where he was to appear at a lecture with Brent, when Barry lost control of the car after it veered onto the shoulder of Interstate 86. Lila suffered minor injuries.

Barry was probably the most visible member of the National Geographic Society, where he worked for some thirty-five years, being chairman of the Committee For Research and Exploration. He was to have been honored on 4 November with the Society's Distinguished Geography Educator Award at the annual meeting of the National Council for Geographic Education in Lexington, Kentucky. He has been the recipient of many awards, including an honorary doctorate from the University of Cincinnati, the Explorers Club Medal, the National Geographic Society's Hubbard Medal, the Society's Franklin L. Burr prize, the William Howard Taft Medal from the University of Cincinnati, a National Press Photographers Association award, a Distinguished Alumni award from the University of Cincinnati's McMicken College of Arts and Sciences, and honors from the Association of American Geographers.

**KAYE EVERETT, DISTINGUISHED POLAR SOIL SCIENTIST DIES.** Kaye Everett was truly one of a kind, and even though he worked for me for a couple of years, I was never able to separate fact from fiction. But one thing is known for sure, he loved being in the field, and was probably happiest when there, as long as a supply of beer wasn't too far away. He spent some time in Antarctica, although he was much better known as an Arctic man. One of his daughters, Shaun, worked for the Antarctic contractor as sort of a travel agent, and probably spent more time in Antarctica than her Dad.

Kaye died as he wanted to die, in near obscurity, with few knowing of the seriousness of his condition. He died peacefully during the early morning of 21 October, victim of pancreatic cancer at the age of 60. Kaye had a 34-year love affair with

the polar center at Ohio State University, where he got his PhD under the late Dick Goldthwait on downslope soil movement and deformation. Recently he had initiated a new project to study carbon status of soils and permafrost in northern environments.

Kaye was a real character. When he worked for me, he drove a deplorable vehicle of sorts which he took to the office via back roads, as it could never pass inspection. The hood was tied down, and when he stopped the car, he had to disengage the battery. At that time, he was an inveterate smoker, three packs a day, and couldn't answer the telephone unless he had a cigarette in his mouth. But he gave up smoking many years ago, after waking up one morning with a sharp pain in his chest. He became an instant convert.

And he had a great capacity and love for a popular malt beverage, holding some sort of a chug-a-lug record at some watering hole in Idaho or Utah of which he was particularly proud. He used to claim he drank a case a day, two six-packs before dinner, one with the meal, and another during the evening! Fact or fiction? We had him working in the field the summer after the Good Friday earthquake in Alaska, and after being out in the boonies for a fortnight, he came back to a military installation to get resupplied. He went to the PX to get some beer, and they told him it wasn't necessary to buy any, because after a party the night before, there was a whole trash can full of beer outside the back door. Kaye's comment to me afterward was, "I always wanted to know if I could drink a whole trash can full of beer!"

Kaye claimed that he once was a motorcycle racer of some repute, but when I brought this up to some of his other friends, they had never heard of him cycling! So maybe he created special stories for all of us, spreading them around like scattering bird seed for the innocents to pick up and promulgate.

But Kaye was truly a nice guy, a fun guy to be around, a great guy to be in the field with, and a dedicated polar soil scientist. He died much too young, but if he did all the things he claimed he did, he lived a very full life in those far-too-few years. Presumably he got through St. Peter's pearly gates with no problems, and somewhere up there, he is enjoying yet another beer.

**IF IT'S A KLIPPER, YOU CAN BE SURE.** Now available: a top-of-the-line Antarctic poster at a rock-bottom price. Photograph by Stuart Klipper, published by Mirage Editions. Image is a dramatic depiction of a spectacularly striated iceberg in a brash field. It was shot in 1989 from the launch of the USCGC POLAR SEA in the Dumont d'Urville Sea at the Geomagnetic South Pole. Price: a mere \$15.00 plus shipping. (Stuart's address: 5044 Xerxes Avenue South, Minneapolis, MN 55410.)

**ANTARCTIC SPLENDOR** (Esplendor Antartico) by Frank S. Todd (Book review by John Splettstoesser). "Mr. Penguin" has really done it this time. Frank Todd has produced one of the handsomest coffee-table picture books of Antarctica in existence. The book's title tells it all. The splendor of the continent is revealed in a book of mainly photographs, which follow a brief Preface and a 10-page Introduction. To reach a wider audience, all text in the book is in both English and Spanish, including captions for photographs.

Frank Todd is best known for his work as a naturalist and expert on birds, but he has a very diversified background. He was at Sea World in San Diego for many years, when he created "Penguin Encounter," for which he is probably most widely known. Other "Penguin Encounters" have followed in the U.S., as well as overseas, all a tribute to Frank's success in displaying wildlife in a realistic setting. If there is anything Frank knows well, it is birds and Antarctica, and both come together in this book. But he also knows a lot about photography, as is evident in the quality of the photos, as well as the message the scene conveys.

the dust cover photo is a deep-blue-colored iceberg with Chinstrap penguins on it, a classic, once-in-a-lifetime opportunity for such a scene. Photo subjects in the book include not only icebergs, but all penguin species found in Antarctica, other birds, plants, and marine mammals. All these indicate Frank's knowledge of the continent on which he has spent more than 20 summer seasons, for he is a walking encyclopedia of its biology. I have been with Frank on many cruise ships to Antarctica, where we sometimes are employed as lecturers, and each time I come away with some new facet of information that Frank has stowed in his lecture repertoire. His presence on a tour ship is an asset for the tour companies, for he has a considerable following of passengers associated with wildlife organizations. He is also one of the leading proponents of environmental protection of Antarctica, going back to a time when it was not even fashionable to be known as an environmentalist.

As you might have already suspected, I recommend this book highly, and to order a copy contact Hancock House Publishers, 1431 Harrison Avenue, Box 959, Elaine, WA 98231-0959. In Canada, contact Hancock at 19313 Zero Avenue, Surrey, B.C. V4P 1M7. The book was published in 1993, has 177 pages, and a Special Patrons Deluxe Limited Edition (signed by Frank) is priced at \$75 (U.S.). Add \$6 for postage and handling in North America; outside N.A. add \$15 for airmail. If you happen to be in Chile, contact Diseñadores Asociados Ltda., Pucuro 2151, Santiago 9, Chile.

**A DYNAMIC REDHEAD, APRIL K. LLOYD, GOES TO THE ICE.** This austral summer, a teacher who had a dream is seeing it all come to fruition, as she will be part of Al Harper's crew at the South Pole working on CARA's (Center for Astrophysical Research in Antarctica) programs. An Antarctic, upon returning from summer field programs at McMurdo, used to visit her school and tell the captive creatures all about the ice. At least one was listening to him, the teacher, and she was enraptured by it all. One thing led to another, and when she found out that teachers were not ostracized from going, she made application.

We met her at the September orientation, and she certainly is dynamic. One staff member of OPP said that she would "melt all the ice in Antarctica." Well, we don't know about that, but she is going to be what is known in the sports world as an impact player. RJS and I had dinner with her and her husband at the home of the lecturing Antarctic, and I came away with the feeling that she will either end up as Ms. Antarctica or be lynched, and I wasn't quite certain which way it would go. This is no Yes Person. She has a mind of her own, and she's not against changing the system! Reminds me when as a young redhead myself I was confronted by Roger Babson of Babson Institute when he visited Harvard University's Blue Hill Observatory and he said to me, "I would never marry a redhead, but I would hire one any time, as they stir up things!" We asked April to write us about how she got involved in Antarctica, and she sent the following:

I have taught third grade in Charlottesville, Virginia, for the past six years. I am an avid user of technology and believe that reform to education must incorporate the inclusion of public schools in the Internet Information Highway. Schools have traditionally been isolated pockets where students learned in seclusion. Teachers were responsible for providing resources and experiences without access to the larger community. My passion in teaching is to use the Internet to provide students access to the world that we are preparing them to enter. My goal is to create a classroom where students look forward to coming to school each day, where they like to learn and feel comfortable looking for answers to difficult questions. If children feel that they have the power to learn, with people available to help them, our future is bright.

I have been interested in Antarctica for many years. The dream to actually go



there became a reality this past year when I was told that the National Science Foundation Office of Polar Programs and Teacher Enhancement Divisions were offering a grant application program for high school teachers. Another requirement was prior participation in a Teacher Enhancement Program. Although I was an elementary teacher, I had participated in a TE program and applied anyway. As with most things in life, if you believe in what you are doing, work hard to convince others to give you an equal chance, and follow through with your commitments, opportunities materialize. The opportunity to go to Antarctica fulfills a dream while also allowing me to work on a project connecting students to scientists over the Internet.

When I am not teaching, or logged onto the Internet, I am reading, running or riding my bike. I like all kinds of music, from rock and roll to classical, but being born in Texas, I especially like country rock and Texas swing music. I wear lots of western clothes and boots, and the younger kids at my elementary school fondly refer to me as the cowboy teacher.

If you would like to contact me directly, I am an avid e-mail correspondent and would welcome a message:alloyd@pen.k12.va.us

**FROM THE E-MAIL SCREEN OF GUY GUTHRIDGE.** The growing season in the Antarctic Peninsula is two weeks longer than it was in 1964, says Ron Lewis Smith of the British Antarctic Survey; summer temperatures are up 2 degrees C. So, one of Antarctica's two species of flowering plants has increased on three islands from 700 in 1964 to 17,500 in 1990. The other has increased from 60 to 380. Species new to Antarctica could get started if the warming keeps up. The plant expansion mirrors that in Spitzbergen and northern Finland, says Robert Crawford of the University of St. Andrews, Scotland.

The grounded part of the antarctic ice sheet has lost mass at 235 billion tons (about a hundred-thousandth of the ice sheet) per year for the last century, says W.S.B. Paterson. He used worldwide sea level rise figures to calculate the loss and reported it at a NATO workshop on ice in the climate system. His 1993 paper recently came to the attention of the Antarctic Bibliography project.

Summer sea ice cover in the Bellingshausen Sea was 30 to 60 percent less in 1989-1991 than it was between 1973 and 1986. When researchers led by Stanley Jacobs, Lament Doherty Earth Observatory, visited the area in February 1994 aboard USCGC POLAR SEA and NSF's RV NATHANIEL B. PALMER, the sea ice had recovered from its minimum, but was still less than the 1973-1986 average. In some locations the oceanographers collected the first data since Adrien de Gerlache's ship BELGICA was icebound there more than a century ago.

McMurdo's sea ice runway gets thicker as the season progresses. K. Morris and M.O. Jefferies of the University of Alaska report seasonal increases of as much as 0.57 meter (in 1989), with a maximum thickness of 2.34 meters (in 1990). So the amount of ice that grows during the operation of the runway is about 25 percent of the maximum ice thickness.

France won't rebuild the damaged airstrip at Dumont d'Urville. The Cabinet decided to drop the project "because of the difficulty of maintaining it permanently and out of concern to protect the antarctic environment." The Cabinet also banned whaling in France's antarctic economic zone.

A new French-New Zealand agreement covers antarctic operations out of Christchurch. French personnel will be headquartered in the International Antarctic Center and stage a C-130 out of Christchurch and a Twin Otter out of McMurdo to reach Dome C and Dumont d'Urville.

Glycoproteins extracted from antarctic fishes by OPP grantee Arthur DeVries, University of Illinois, were crucial to an experiment that froze a rat liver and revived it six hours later. Boris Rubinsky, University of California, Berkeley, who did the experiment, thinks it's just a matter of time before human organs are routinely frozen for significant periods. "I'm convinced," he says, "that long-term organ preservation will come through mimicking the strategies that nature has already devised."

Weddell seals can produce at least eight calls with their mouths and nostrils closed, according to three Australian researchers. The calls range from long, high-frequency whistles to short, low grunts, and are the same on land as those made under water.

The Antarctic contributes significantly to marine biodiversity, state two Belgian biologists. Benthic amphipods of the Southern Ocean comprise 702 species, of which 85 percent are endemic.

The 27 September New York Times gave prominent coverage to research on penguins by grantees Gerald Kooyman (Scripps Institution of Oceanography) and William Eraser (Montana State University). Gerry Kooyman and party made the first October visit since 1969 to the Emperor penguin colony on sea ice at Beaufort Island, 50 n. mi. north of McMurdo. A VXE-6 helicopter provided the transportation. Kooyman had 2.5 hours on the site and did a detailed census of the colony in calm conditions. David Bresnahan, NSF Representative Antarctica, cites the quickly planned event as "a great example of the team approach desired in USAP that allows science personnel to take advantage of all the logistics expertise available."

At Macquarie Island, an Australian study shows a correlation between the decline of wandering albatrosses and the onset of large-scale longline fishing for tuna in the southern hemisphere. Near South Georgia, on the other hand, wandering albatrosses and possibly light-mantled sooty albatrosses probably sustain themselves on dead squid scavenged from, among other sources, fishery waste. Black-browed and especially grey-headed albatrosses eat mostly live squid. A British study yielded this information.

Notornis Magazine reports occurrences of live Adelie penguins (a) at a camp 50 kilometers from the nearest open water at McMurdo Sound (there were two; both died), and (b) at a public beach in New Zealand (there was one; a conservation officer took it to a more remote beach).

The 1994 antarctic ozone hole is nearly as deep and wide as ever. That's a surprise: Mount Pinatubo's 1991 debris, which enhanced the chemical destruction, is almost gone. Ozone levels over South Pole Station dropped to 102 Dobson units in early October, comparable to 105 in 1992 and 108 in 1991, but not as bad as the record 91 in 1993. The discouraging possibility is that the hole is being deepened and enlarged by the steady increase in the stratosphere of chlorine and bromine from synthetic chemicals. Arlin Krueger of Goddard Space Flight Center figures maybe we've returned to "normal," which means a progressively deepening ozone hole.

The main reason for the lowest-ever value of total ozone - the 91 (+ or - 5) Dobson units recorded 11 October 1993 over South Pole - was prolonged presence of polar stratospheric clouds caused by unusually low temperatures, sulfate aerosol from the 1991 Pinatubo eruption, and increased chlorine, writes D.J. Hofmann in Geophysical Research Letters.

An intense phytoplankton bloom in the western Ross Sea polynya, three to four times previously reported values, is shown by coastal zone color scanner imagery. The bloom in December 1978 covered more than 106,000 square kilometers; primary productivity was 3.9 grams of carbon per square meter per day. Kevin R. Arrigo and Charles R. McClain of Goddard say in Science, 14 October, the western Ross Sea may be a much bigger carbon dioxide sink than recognized. They hope for better data from future satellite ocean color missions.