THE ANTARCTICAN SOCIETY

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HONORARY PRESIDENT — AMBASSADOR PAUL C. DANIELS

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The Antarctican Society and the National Academy of Sciences' Polar Research Board are most happy to co-sponsor the Society's 20th Annual Memorial Lecture

50 YEARS UNDERNEATH GLACIERS

by

Dr. Richard P. Goldthwait
Professor Emeritus
The Ohio State University

on

Friday evening, 18 May 1984

8 PM

in the Lecture Room
The National Academy of Sciences
2101 Constitution Avenue N.W.
Washington, D.C.

Dr. Richard P. Goldthwait is a glacial geologist who has a long and most distinguished career as a teacher, researcher, and administrator. As founder and first Director of the Institute of Polar Studies at The Ohio State University, Dr. Goldthwait is directly or indirectly responsible for hundreds of scientists going to Antarctica, many of whom received advanced degrees based on their research. He has encouraged and fostered the multidisciplinary approach to environmental studies. His broad field experience and extensive research give him a wealth of material to draw upon when he tells us what is beneath glaciers.
(More on pages 15 and 16)

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Cocktails and Dinner precede the Memorial Lecture, all in the main building of the National Academy of Sciences (see address above). The Open Bar opens at 5:30 PM, and dinner follows in the Refectory at 6:45 PM. The menu is breast of chicken Marengo, miniature antipasto with bread sticks, rice pilaf, toasted French bread Parmesan, wine, chocolate mousse with butter cookies, and coffee or tea. Reservations at $21.00 per person must be made with the Antarctican Society prior to sunset 15 May! NO reservations accepted by phone — by mail ONLY! Checks should be mailed to the Antarctican Society, 905 N. Jacksonville St., Arlington, VA 22205.

BERGY BITS

Bergy Bits is a non-denominational, highly prejudiced column written (unless otherwise noted) by an older Antarctican who marches to his own drummer. It should in no way be construed as the Voice of the Society, only as a supplement to the cover announcing the next meeting. If you are sensitive about Antarctica, you should avoid reading it; if you have a sense of humor and don't mind the stretched truth, this column may be for you; if you can do a better job, let our President know and you'll probably have yourself another job without compensation. Our aim is to have at least one paragraph of interest to all of our members, remembering that you folks are of all ages and have multiple interests.

ALMIRANTE BROWN STATION BURNS. (Guy Guthridge). The Argentine station Almirante Brown, at 65° S latitude on the west coast of the Antarctic Peninsula, burned to the ground 12 April 1984. Six of the seven station residents were unharmed in the early morning fire; the seventh, Dr. Sanchez, sustained minor burns and smoke inhalation. The station consisted of three small interconnected buildings made of wood. An emergency camp, 200 yards from these buildings, remains. On Paradise Bay, the site is one of the most picturesque in Antarctica and is a familiar sight to passengers of tourist ships that visit the region. At the request of the Argentine Antarctic Institute, which owned and operated the station, the U.S. National Science Foundation sent its research ship HERO to evacuate the seven men. Arriving at 5:17 PM on the 12th from the U.S. Palmer Station (about 40 miles west of Brown), HERO picked up the men and was on the way back to Palmer within 20 minutes. HERO was to deliver the Argentines to their station Jubany, on King George Island, during its final trip out of Antarctica for this season scheduled to begin on 16 April.

NEW ANTARCTIC FOSSILS. (NSF News Release). Dr. William Zinsmeister, Ohio State University, led an expedition to Seymour Island this past austral summer which discovered the fossil remains of eleven species of invertebrate marine animals, some of which were found for the first time; others were known to exist only at mid-latitudes. The unexpected findings were made on the steep slopes of badlands topography which makes up most of Seymour Island, an ice-free, 15-mile long island at the northeastern tip of the Antarctic Peninsula. The first fossil finds were of a certain class of starfish, crabs and crinoids.

Dr. Zinsmeister said that "recent discoveries in the polar regions will modify ideas about evolution. It's apparent that evolution has indeed been taking place in the polar regions and that these regions may have been a source for many groups of animals and plants. . . . Evidence shows that these animals evolved over millions of years in the high latitudes - above 60° latitude - under conditions that allowed them to move northward."

The work of the researchers appears to have solved, a mystery that has baffled scientists for over a century - the abrupt appearance of new groups of invertebrates that has been found in the fossil records of the southern continents. The evidence now suggests that these animal groups have had a long period of evolutionary development around Antarctica before moving northward. Dr. Zinsmeister and Dr. Rodney Feldman of Kent State University have written an account of the findings which will appear in Science. It has now been published in the April 20th issue.

FILMMAKERS TO VISIT USARP. (Guy Guthridge). A filmic highlight of the 1957-1958 International Geophysical Year was the Planet Earth series—half a dozen films on the state of knowledge in geophysics. Now WQED, the Pittsburgh public television station, is doing a followup: *Geos: the Rediscovery of Planet Earth*. Both the new series and the original one a quarter century ago were planned by the National Academy of Sciences, which this time established a special Geophysics Film Committee to steer the effort. The late Dr. Hugh Odishaw chaired this committee and figured heavily in both series. One of his last works before his death on 4 March 1984 was a 21 February letter to the National Science Foundation conveying the detailed plans for the film group's coming work in Antarctica.

As guests of the National Science Foundation, a four-person WQED film crew will visit McMurdo-accessible parts of Antarctica for five weeks or so during the 1984-1985 season. They will film activities of scientists in the United States Antarctic Research Program. Series Producer and Director, Gregory Andorfer says, "We will interweave their [Antarctic investigators'] stories into the larger mosaic context of our seven-hour television series on the earth sciences." The Antarctic components will comprise 30 to 35 minutes of the series.

FRAM: THE JOURNAL OF POLAR STUDIES. The first issue of Stephen Carter Jackson's journal on polar lands has been published. Originally it was going to be The Journal of Polar History, but it has been changed to FRAM: The Journal of Polar Studies. I'm not quite certain what FRAM is doing in the title; it's the only word appearing on the cover so I presume Steve wants it known as FRAM, I think Bergy Bits will refer to it as JPS so as not to confuse it with the old ship. JPS is a very professional-looking volume, being 364 pages in length. There are twelve major papers and then a potpourri of other things ranging from translations to notes and correspondence. There should be something for everyone interested in polar history; it's for the serious reader, not to read for comic relief. I presume the first volume of JPS is a trial balloon, that we won't really have a true feel for it until after its shakedown cruise through 1984-85. Right now there is one very serious problem, a tremendous need for some creditable editing. I have read several articles and Ruth is going through the whole volume; for a professional journal it is overloaded with misspelled words, including names of explorers and even uncomplicated polar words. Errors are monumental, such as misspelling of Stefansson on page 193 — the inaugural edition was dedicated to him, too! And one of the Advisory Board, Francis Auburn, wrote a major article whose title appears in bold print on page 201 as "Antarctic Minerals and the Third Word." Oh my, oh my! There are literally, sic, over a hundred errors of one kind or another. But these can be reduced if Steve picks up a good editor, which he badly needs. The price of $50 per year is reasonable, although I might want to wait to see subsequent issues before committing myself. If you would like to order a sample copy, you can get one for $30 from Polaris Publications, P. 0. Box 8089, Bangor, Maine 04401. We wish Steve luck with JPS, as it will be good to have a reputable journal on polar history and polar studies.

BILL SLADEN COMMITS HIMSELF. Our only two-timing Memorial Lecturer, Bill Sladen, sort of disappeared from sight last year, and we wondered if he had migrated with some of his best friends to their Siberian feeding grounds. It seems that not only is he alive and doing well at Johns Hopkins, but he has also taken unto himself a permanent playmate who is neither bird nor mammal — something very difficult to believe until you see his selection. To prove that all men are mere mortals, he married the lovely Minnesotan, Dolores Ulman of Arlington, Virginia on 29 April 1983. This is "sort of" cast in permanency as the marriage has been blessed and sanctified in England (Saint Mary Magdalene Church, Westerfield, Suffolk - 21 May 1983), so Bill is truly committed. But as long as one is dedicated to the insti-

tution of marriage, I can think of no one finer to share that dedication with than Dolores. She's tall, streamlined, attractive, sexy, gracious, pleasant, elegant, eloquent, educated, and nice, also young. Come to think of it, why did she marry Bill?

ALICE DATER TAKES A BATH. If you happen to read Bergy Bits you know that we are partial to Alice Dater, widow of the well-known Antarctic historian who was such a driving force in the activities of this Society in the 1970s. She went to Antarctica this past austral summer, being on Lindblad's terminal cruise of the EXPLORER. Alice likes to do things with a flair, and she created a little bit of Antarctic history in McMurdo Sound when she became an official member of the Bert Crary Antarctic Swimming Club. Alice was in a zodiac going ashore somewhere in McMurdo when an unfriendly wave goosed the zodiac and tossed Alice and a compatriot into the sea. Now this isn't such a great a feeling when (1) you are overdressed in polar clothing, (2) you don't have a life jacket, (3) the water is icy cold, (4) you're a woman, (5) you're a septuagenarian, and (6) you can't swim even in your own bathtub. So Alice went down, became a human submersible. She thought she was a goner, and all the bad actions in her life flashed through her mind, terrifying her. She opened her eyes to see the pearly gates, but saw only someone's leg in the water. It turned out she was in real shallow water, and wasn't about to die. They took her back to her stateroom and her eyes were dancing with thoughts of receiving copious quantities of hot buttered rum. But instead all they gave her was tea. Then the ship's doctor came down and jabbed her in the chest to check her reactions. He found out they were darn good, so he then told her to go up to the wardroom and get a drink for herself. So for this Olympic year, we toast our own McMurdo Sound breaststroke, non-swimming champion, Alice Dater!

FUEL DRUMS, MOUNTAINS, SMOKED SALMON, AND OAE'S. (Charles Swithinbank). I have just spent a couple of months in Antarctica, three weeks as copilot of one of our Twin Otters. We provided an air taxi service for a joint USARP/BAS assault on the geology of the Thiel Mountains led by Ian Dalziel of Lamont. As it turned out, the geologists got in trips to Haag Nunataks, Ellsworth Mountains, Martin Hills, Pirrit Hills, Nash Hills, Hart Hills, Stewart Hills, Whitmore Mountains, Patuxent Range, and just about everything in the Thiel Mountains ... None of this would have been possible but for fuel caches left in various places by VXE-6 the year before. We flew three times to the South Pole, being overwhelmed each time by the friendly reception and super-efficient refuelling services which allowed us to geologize more outcrops than any of us had dreamed of. [We took off] on 28 December ... to fly the 1000 km to Halley. As [our pilot, Garry Studd] trimmed the aircraft ... he assured me that we were heading true north. Since northward lay the Atlantic, the Pacific, and the Indian oceans, I was not sure how to respond. But 3 1/2 hours later Whichaway Nunataks appeared right on the nose as we had planned, and we landed amongst them to pump fuel. Now four empty drums bear witness to our passing. Onward over Recovery Glacier (daunting), Shackleton Range (very beautiful), and Slessor Glacier (terrifying), we landed at Halley after 6 hours 50 minutes in the air. From there we flew to Druzhnaya, passing the Soviet ships KAPITAN GOTSKY and PIONEER ESTONIA working ice along the coast. Refuelling at Druzhnaya (by prior arrangement) we were invited in for a meal of smoked salmon, salami, chocolate, bread, butter, and deicing fluid (ethyl alcohol). From there, onward to Fossil Bluff, Rothera, and the Chilean station Marsh, where we saw the unfortunate USCGC WESTWIND and a USCG C-130 that was bringing bits to repair her. HERO was also in harbor. After a day trip to Arctowski we were airlifted to Punta Arenas by C-130, courtesy Fuerza Aerea de Chile. The airport at Punta Arenas was overflowing with USARPs, including Mort Turner southbound with Joanne carrying his hammer. Jim Zumberge and

George Llano were cruising in WORLD DISCOVERER; we missed them by one day at Marsh. We were not the only OAEs just past the first flush of youth: the HAS ship JOHN BISCOE was at the time southbound with Colin Bertram and Alfred Stephenson, both of whom wintered in the Antarctic Peninsula in the nineteen-thirties. Some uncouth geologists referred to it as "the geriatric cruise" ... (Ed note: if the shoe fits ....!)

REPORT OF INTERNATIONAL BIOMEDICAL EXPEDITION TO THE ANTARCTIC (IBEA). The 6th International Symposium on Circumpolar Health, Anchorage, Alaska, 13-18 May 1984, will devote one day to a special session on the International Biomedical Expedition to the Antarctic. After four years of planning and organization by the Scientific Committee for Antarctic Research (SCAR) Working Group on Human Biology and Medicine, the IBEA was successfully carried out in 1980-81. To view man as a whole, the IBEA was multidisciplinary with projects in physiology, biochemistry, microbiology, immunology, psychology, sleep and epidemiology. This is the first time such a presentation will have been made. A 100-minute TV documentary will be shown. The core sessions of the Symposium will be on (1) cold injury, physiology and adaptations, (2) infectious diseases, (3) cancer and other chronic diseases, (4) genetics, anthropology and demography, (5) nutrition, (6) environmental and occupational health planning and engineering, (7) social environment, mental health, alcohol and drug abuse, (8) maternal and child health, (9) dental health, and (10) health care delivery and information systems. Our own Fred "Muckluck" Milan is president of the National Organizing Committee on Circumpolar Health, and Secretary Margaret Heckler, Department of Health and Human Services, will be the keynote speaker for the Symposium. Now there is a most unlikely twosome.

THE DEPLORABLE EXPEDITION. Several years ago the Society was given a delightful lecture on the Wilkes Expedition by Dr. Herman Viola, Director of the National Anthropology Archives at the Smithsonian Institution. Recently he had another occasion to give the same talk, and afterwards we absconded with his text for possible use in a Newsletter. No one knows more about Charles Wilkes than Dr. Viola, and his presentation is full of wonderful little anecdotes about the Expedition which are probably not known to many of you. Wilkes is staging a comeback and his renaissance will reach a climax late in 1985 when the Smithsonian will have a Wilkes exhibit. The Smithsonian is looking for a co-sponsor, also for the road through to the right person to get a postage stamp issued on Wilkes. Dr. Viola's account has everything except sex — a dramatic account of how science won out in spite of the frailties of the expedition leader, a scenario which has been repeated and which will no doubt be repeated in the future. This is great history — please be sure to read it in its entirety.

THE UNITED STATES SOUTH SEAS EXPLORING EXPEDITION, 1838-1842. (Excerpted from talk by Dr. Herman Viola, presented at Smithsonian Institution on 12 January 1984.) The story of the Wilkes Exploring Expedition began in the early 19th century with a man named John Clive Simms, who believed that the world was hollow and that the entrances to the inner world could be found by sailing to the South Pole, the "Holes in the Poles Theory." New England merchants, anxious to find new sealing and whaling grounds, allied themselves with Simms and his friends to encourage Congress to sponsor a South Seas exploring expedition. The United States Navy liked the idea because it offered the opportunity to learn more about this little-known region and to intimidate the South Pacific natives who had killed many American seamen over the years and who had not been punished for it. Thanks to these various interests and the encouragement of President John Quincy Adams, Congress in 1828 passed a resolution requesting

the President to send one of the public ships to the Pacific to examine coasts, islands, harbors, shoals and reefs, if it could be done without a special appropriation. Despite this resolution, it was ten years before the expedition set sail for the South Seas. Officially known as the United States South Seas Exploring Expedition it also enjoyed several other names, such as the Wilkes Expedition, and, perhaps most accurately, the Deplorable Expedition. The newspapers gave it this name because of the endless delays and confusion. It seemed that everything about the expedition was controversial. There were fights over the number and types of ships, the choice of the commander, the scope of his authority, and the size and background of the scientific staff, to mention just a few of the problems. The general feeling of the American public about the venture was nicely summed up in 1837 by John Quincy Adams who was then serving as a representative in Congress from Massachusetts. All he wanted to hear about the Exploring Expedition, he said, was that it had sailed.

Six ships finally sailed from Hampton Roads, Virginia on August 18, 1838, under the command of Lt. Charles Wilkes. Before the explorers reached home four years and two presidents later, they had sailed 87,000 miles and established Antarctica as a continent. They had surveyed 280 islands as well as much of America's northwest coast, had prepared 200 new nautical charts, had crossed the Pacific Ocean three times, and had circled the globe. A throwback to an earlier age, it was the last major exploring expedition to depend entirely on sail, yet it was also a harbinger of the future, for it placed the natural sciences in the United States on a professional basis. The scientists it employed were outstanding young scholars in their fields, not the wealthy amateurs who had previously dominated the natural sciences. It also was directly responsible for turning the Smithsonian Institution into a museum as well as a research institution.

Wilkes was not the Navy's first choice to lead the squadron. Of forty lieutenants in the service, thirty-eight had had more sea duty. However, he had the vision, determination and energy to do the job. He was not a professional scientist, yet he displayed superior expertise in surveying, chart-making, astronomy, and all the studies related to the naval profession. He was a strict disciplinarian and often in conflict with his officers and men. Very little humor emerges from the pages of his five-volume narrative of the expedition. He cast himself in the role of lonely hero of the venture with such single-mindedness that he failed to confide in any of his fellow officers. He kept his orders secret, revealing only what would justify his actions. Some say Herman Melville put a good bit of the secretive and aloof Wilkes into his characterization of Captain Ahab in Moby Dick.

The civilian scientific corps, cut from a projected 25 members to 9, came from a generation for whom science was a profession rather than an avocation. Their average age was 32. The geologist was James L. Dwight Dana, who once said that "to the naturalist, collections were better than books." Already the author of a major work on mineralogy, he went on to enjoy a long and productive career "as one of the greatest American leaders of science."

Horatio Hale, the linguist and ethnologist, was only 21 in 1838. He nearly missed out on the expedition because Wilkes believed that any of his men could "pick up languages well enough to make vocabularies."

Titian R. Peale, a native of Philadelphia, was a zoologist and artist, and a veteran of a previous exploring expedition to the west. He sometimes managed his father's museum in Philadelphia where a five-legged, six-footed, two-tailed cow giving milk to a two-headed calf was used to lure visitors to the scholarly exhibits.

The botanists were William Rich and William D. Brackenridge. Brackenridge was a Scot who Wilkes felt robbed the expedition of its one hundred percent American flavor. Nevertheless, the seeds Brackenridge brought home formed the nucleus of the Botanical Gardens in Washington. He later became Superintendent of the United States Capitol grounds, and he laid out the grounds for the Smithsonian Institution.

Charles Pickering was the zoologist. Pickering, who later became one of the finalists for the first Secretary of the Smithsonian Institution, did a little of everything - physical anthropology, botany, as well as zoology.

One of the scientists had such a heated confrontation with Wilkes that he did not complete the cruise. He was Joseph P. Couthouy, the conchologist. Couthouy had been so anxious to accompany the expedition that he applied in person to President Andrew Jackson. He told Jackson that if he could not go as a scientist, he would sign on as an ordinary seaman. When Couthouy refused to turn over his notes and drawings to Wilkes, he was ordered home "for disobedience of orders." Couthouy became captain of his own ship during the Civil War and was killed by a Confederate sharpshooter.

Two artists accompanied the expedition, Alfred T. Agate and Joseph Drayton. Drayton at 42 was the oldest of the scientists. Several of his drawings done during the expedition have survived in the Smithsonian collections, including one of a fish caught in the Fiji Islands.

The goals set out by the Act of Congress and transmitted to Wilkes by the Secretary of the Navy were many and explicit, but like the Commandments, two were the greatest of all. The expedition was to promote "the great interests of commerce and navigation", and when compatible with that, to "extend the bounds of science and promote the acquisition of knowledge."

Wilkes commanded the sloop-of-war VINCENNES, which was the largest vessel of the squadron. She was 127 feet long, 35 feet wide, and carried a crew of 190. Second in command of the expedition was Lt. William L. Hudson, on the sister sloop, the PEACOCK. Hudson, at 44, was four years older than Wilkes, and the oldest officer on the expedition. He was the best seaman among the officers and the best liked.

The other ships were the brig-of-war PORPOISE, a supply ship named THE RELIEF, and two identical schooners, the FLYING FISH and the SEA GULL. Modifications had been made on most of the ships to accommodate the civilians and to make room for the non-military, scientific nature of the expedition. Even so, the scientists complained of inadequate room and facilities to pursue their duties, while the officers and seamen often resented what little space they did use. Writing home to his daughter, Peale described his cabin as "just about as large as your mother's bed. In it I have a little bed, over and under which are packed clothes, furs, guns, books, and boxes without number, all of which have to be tied fast to keep them from tumbling about and off the floor which is sometimes covered with water."

Wilkes ordered all officers to keep daily journals which were to become the property of the government and to be used for writing the history of the expedition. Twenty-three are now in the National Archives. The diaries were the source of much complainings. One officer wrote in his that "keeping a diary is a damned bore." Some of the officers ripped out pages when they were asked to give them to Wilkes for periodic review. One officer kept two diaries — one to give Wilkes and one to keep for himself. Not all the diaries are useful for research because some of the officers did little more than copy the entries from the ships' logs.

Wilkes was a rigid disciplinarian and he quickly became disliked by most of his officers and crews. For example, although the Navy in 1838 allowed only a dozen lashes as a maximum punishment, Wilkes frequently gave more than that, sometimes as many as forty lashes. Needless to say, desertion was a serious problem during the four-year voyage, in fact over 120 of the 500 men who served deserted along the way. Wilkes also lost many men whose enlistments ran out during the voyage. Even by offering bonuses and extra shore leave, he could not get many of them to re-enlist — he lost 48 men in Hawaii alone. Wilkes was so angry he imprisoned three marines who tried to leave, and had them flogged every other day for a week until they agreed to re-enlist. He was later court-martialed for this.

Charles Erskine had sailed before under Wilkes and had been flogged, he claimed, unjustly. Soon after leaving the United States, Erskine decided to kill Wilkes. Just as he was about to drop an iron spike on Wilkes' head, however, he saw a vision of his mother and stopped. He told this story in his book, Twenty Years Before the Mast, which he wrote in 1890. Ironically, Erskine learned to read and write while on the expedition.

Those were cruel times, and Wilkes was probably no worse than many. For example, when the ships were in Sydney, Australia three British sailors stowed away on one of the American ships. One of the stowaways was a twelve-year old drummer boy who became a mascot to the American sailors. When Wilkes returned to Sydney, he gave the stowaways back to the British authorities. The drummer boy's punishment was 110 lashes. Of these the boy received 97, the last five posthumously.

The first important stop for the Wilkes Expedition was Orange Harbor at Tierra del Fuego, which the ships reached in February 1840 after spending Christmas in Rio de Janeiro. Wilkes used Orange Harbor as a base while he tried to explore the waters around the South Pole. He took four ships and left two and most of the scientists behind to survey the harbor and coast and to collect scientific data. There were only a few natives and the area was not of much interest to the scientists. Moreover, the weather was so bad that little work could be done while the scientists were there. One cabin boy used his time to give Couthouy's quarters a thorough cleaning which included throwing away all the seashells he found lying loose in the cabin. Meanwhile, Wilkes was not having much better luck. The weather was so bad the four ships could not sail in company and most of them turned back without accomplishing anything. Nevertheless, some land was found that did not appear on charts and which encouraged Wilkes to make another attempt the next year.

Wilkes had planned for the squadron to reunite at Valparaiso, Chile, but only five made it. The SEA GULL had 'disappeared somewhere between Orange Harbor and Valparaiso; it was never heard from again. Wilkes evidently planned to rename Orange Harbor, Sea Gull Harbor, and he submitted it to the Navy Department that way after his return. However, when the map was engraved, the original name Orange Harbor was retained.

After waiting several weeks for the SEA GULL the expedition travelled up the South American coast to Lima, Peru, their final stop before heading across the Pacific. Thus far, the scientists were generally unhappy because no new or un-explored places had been visited. Wilkes was unhappy because he thought many of his officers and crew were plotting against him. To get rid of the supposed troublemakers, he assigned all the officers and men with whom he had had arguments to the supply ship RELIEF, and sent it back home. His official reason for doing this was that the ship was too slow and delaying his squadron.

Finally, in August 1839 after almost a year at sea the squadron reached the first Pacific island. This was the Tuamoto group. Unfortunately they had a

fight with the first natives they met. To make matters worse from a scientific point of view Wilkes began surveying the islands from aboard his ship and did not want to stop long enough to let the scientists go ashore. At most, he would allow them ashore for an hour or so each day, and he told them that if they did not come back when ordered, he would not let them go again. Couthouy later grumbled that the scientists had gotten 50,000 specimens in Rio, but the collections they got from the first five unexplored islands they saw would not fill a cigar box.

The scientists soon became convinced that Wilkes did not want them to accomplish anything important because he was afraid they would overshadow his own accomplishments. Even some of the younger officers, who were at first very enthusiastic about aiding the scientists, became disenchanted, and the scientists had to endure considerable sarcasm. The sailors called them "clam diggers" and "bug catchers." One lieutenant on Peale's ship ordered its rowboat to load ten water bags, two buckets, one shovel and two scientists. Another officer sent a rowboat to an island to bring back yams, pigs and scientists.

Part of the problem may have been the fact that Wilkes told the crew and officers that all souvenirs they collected had to be turned over at the end of the voyage because they were the property of the government. The crew thought that the scientists had ordered this. Actually it was part of the orders Wilkes had received. The scientists wanted the officers and the crew to help collect things because the more they collected the more complete the collections would be. But they had planned to pay the crew members for any items considered important enough to keep.

To make morale problems even worse, the explorers found, when they got to the exotic places like Tahiti and Samoa, that the missionaries had gotten there first and spoiled all the good times they were planning to have. They were especially disappointed to find that the girls for the most part were now Christian and not as free with their sexual favors as they once had been to previous explorers.

Wilkes and some of his officers were quite pleased at this because they felt desertion would not be as much of a problem. But the missionaries had not been completely successful. At one island the first native they met could speak fluent English, which pleased them very much. But the first thing the native asked for was a bottle of rum. The officers were quite shocked and said to him, "Didn't the missionary on this island teach you better than that?" The native laughed and said, "I am the missionary."

From Samoa, the squadron went to Sydney to prepare for the second Antarctic exploration. After a month's stay in civilization, three of the ships headed south into the polar waters. Their goal was to find land and thus ensure their fame as explorers. The scientists went to New Zealand where the entire expedition was to rendezvous in April, 1840.

Aboard the PEACOCK, on January 16, 1840, Lt. Reynolds and another officer were high up in the rigging and saw what they thought was land. For reasons never really explained, Capt. Hudson failed to log their report. The two officers spotted land again on the 19th and recorded it in the ship's log, only to find Hudson again harboring doubts of its authenticity. But it was well that they logged it, and recorded it in their diaries as well, because a French expedition had sighted land later that same day and came close to depriving the expedition of even this bit of glory. There was enough changing and erasing of reports on this subject for some doubt still to exist on the precise date of discovery. Soon after these discoveries, the PEACOCK collided with an iceberg and had to leave for New Zealand. The two other ships remained in the polar waters and made many sightings of land and charted the coast just outside the ice barrier for over 1,500 miles.

Regardless of doubts and inconsistencies, the expedition can claim to be the first to establish the continental proportions of Antarctica. New charts superimposed on those of Wilkes a century later show his work to be quite accurate. His accomplishments are especially remarkable considering that all the surveying work had to be made from ships standing out from the shore. As early as 1841, a German map labeled this landmass Wilkes Land, a name it still bears.

Meanwhile, the scientists were languishing in New Zealand, where they quickly exhausted all its flora and fauna. Melville was indebted to them again for a sketch they made of a Maori chief, who became the prototype of Queequeg in Moby Dick.

The next big surveying job involved the Fiji Islands, Wilkes had with him a deposition concerning the murder in 1834 of ten crew members on an American ship. All information pointed to Vendovi, a Fiji chief, as the person responsible. Wilkes went to elaborate lengths to capture Vendovi. The officers made friends with Vendovi's family, and then invited his relatives to a feast on board one of the ships. When they came on board, the officers told them they would be kept hostage until Vendovi surrendered. Vendovi came right away, and to everyone's amazement he turned out to be a pilot they had hired a few days earlier to get the ships through some narrow channels.

Wilkes then told Vendovi's relatives that he was taking the chief to America with him where he would be educated and civilized; he would then be returned as an example to his people of the blessings of civilized life. Evidently there was a failure to communicate because Vendovi's brother told one of the officers that he would also like to go to America, and wanted to know if all he had to do to get there was to kill a white man.

The crew found evidences of cannibalism which they tended to regard scientifically as long as "Fijians ate only Fijians." In fact they gathered some cooked remains for their collections.

Native hostility hit very close to Wilkes. His nineteen-year old nephew, Wilkes Henry, the only child of his widowed sister, was murdered by Fijians on Malolo Island. Lt. Joseph Underwood was also killed in the same attack. Wilkes got his revenge by attacking the island. About 20 natives were killed and a large village was destroyed. The two young men were buried on a secluded cay which Wilkes named Henry's Island, and the island of which the cay was a part, the Underwood group.

The expedition remained in the Fiji Islands for three months. Despite the violence, the explorers were proudest of the work done there. They corrected a vast number of errors on existing charts. Brackenridge listed 600 new plant species collected and preserved. Dana's coral collection was nearly unprecedented, and is the heart of what is now the world's largest coral collection. Because of the hostile nature of the islanders, however, most of the collecting was done on a grab-and-run basis, and no collecting was possible in the dangerous interior of the islands.

The next destination was the Sandwich or Hawaiian Islands where the squadron enjoyed a brief holiday in Honolulu. Honolulu was then a town of about 9,000, consisting of four streets, two hotels, seven bowling alleys, several taverns, and many prostitutes. Wilkes and the VINCENNES stayed in Hawaii several months, establishing an observation post on top of Mauna Loa which he called Pendulum Peak. He sent the other ships back into the Pacific where they surveyed and explored the Drummond and Marshall Island groups. In the Drummond Islands the squadron had another fight with natives after one of the crewmen was killed.

The squadron was reunited once again at the mouth of the Columbia River off the northwest coast of America. But catastrophe struck again as THE PEACOCK hit a sandbar and was lost. Although all hands and the scientific papers were saved, a great many scientific specimens were lost, including Peale's entire butterfly collection. After visiting California for a while, and adding another ship to replace THE PEACOCK, the exploring expedition crossed the Pacific for the third and last time. Wilkes sold the FLYING FISH in the Philippines because he thought it was no longer seaworthy. Then everyone headed home.

The last tragedy was the death of Vendovi. He had been confined on THE VINCENNES for more than two years and his health finally failed. He lived just long enough to reach New York and died about two hours after he got there. The resourceful scientists were disappointed at losing their living artifact. But they kept his skull anyway for research purposes, and it too is now part of the Smithsonian Institution's collections.

Wilkes was disappointed, because no bands welcomed the explorers. Instead, charges, counter-charges, and court-martials abounded. Something like three months were spent in court-martial hearings. Nothing more serious than a few reprimands and suspensions came of them. And they probably can be charged to the almost incomprehensible rigors of a four-year journey, beset by nearly all the hardships that can trouble the human mind and body.

The story would not be complete without telling what happened to the collections. Although Wilkes had not seemed entirely keen about the scientific aspects of the expedition during the voyage, he arranged to have himself placed in charge of the collections and the various reports that were to be published upon his return. He personally wrote the official history of the expedition in five volumes.

The United States, however, was unprepared to cope with the tons of specimens the expedition generated. And a good deal of the material was lost before things were put under systematic control. Congressmen, amateur scientists, and collectors in general helped themselves as things were unpacked. Peale was eventually hired to serve as a curator. He was shocked at the mess he found. He said bird skeletons—male and female—were jumbled together, the legs of one being put on another body. Hundreds of fine insects, he said, were put into families without localities, although they came from all parts of the world. Bows were in one end of a room, arrows in another with their ends sawed off to make them fit into fancy stands.

The collections were first placed in the care of the recently founded National Institute for the Promotion of Science, and were displayed in the Great Hall of the Patent Office Building. The upper room which was 265 feet long, was filled with natural history specimens and drew crowds of visitors. But even there the collections were in danger. One unnamed commissioner, is supposed to have sent the government collection of vertebrate fossils to a bone mill in Georgetown, where the bones were ground into commercial fertilizer. Someone else at the Patent Office noticed that the metal tags on Couthouy's shell specimens were discoloring the alcohol, so he took them all out and put them into one jar, thus destroying the documentation for the seashell specimens.

Meanwhile, Joseph Henry, first Secretary of the Smithsonian, made it clear that he did not consider the Institution a museum and he did not want the Wilkes material to ever come there. Since he did not care much for the Smithsonian building itself, he offered the building to the government and suggested that the Smithsonian Institution be moved to another site. He urged Congress to buy the Castle Building, pay for the display cases and grant an annual appropriation for maintaining the Wilkes Collection and other museum items. To his utter

amazement, and chagrin, the government agreed to the idea except it wanted the Smithsonian to stay there as well. Henry had no choice but to accept, and the Wilkes material was delivered in 1857. A sign was hung over the display hall reading, "National Museum of the United States", and the Smithsonian Institution, as we know it today, took off from there. While all this was taking place the scientific community was eager to see the reports ready for publication. That the reports finally appeared was something of a miracle in view of the meager appropriation, bureaucratic indifference, lack of research facilities, and the independent nature of the young scientists. More than thirty years were spent on the reports, and even then some were never completed.

Nevertheless the expedition left a priceless legacy for future research. Dana's work on corals, for instance, described hundreds of new types and corrected many existing errors. It became a standard work, and connected the expedition fully and forever with the systematic study of zoophytes. Of 483 coral specimens that he collected, for example, 229 were unknown to science. - - - Fifty thousand plant specimens formed the basis for the United States National Herbarium, which is now administered by the Smithsonian's Department of Botany. Brackenridge almost lost his appropriation for refusing to give free samples to Congressional wives. Today, there are about three million specimens in the Botany collection. - - - The 1,128 fish collected represented over 500 species. In one report on 588 specimens, 195 were unknown or undescribed when the expedition returned. - - -Peale was more of an artist and collector than a systematic scientist. His stuffed birds and mammals are remarkable, but his report on mammalogy and ornithology was completed by someone else. - - - The vocabularies and grammars Horatio Hale collected were never superseded, and many are still being used today.

Wilkes remained irascible to the end of his life. You may recall he was the Navy captain who seized THE TRENT during the Civil War and almost inspired the British to declare war on the United States. Perhaps it took that kind of leader to accomplish what he did on the Exploring Expedition. Dana, who had had his share of battles with Wilkes, gave him the accolade he probably deserved. "Wilkes," he said, "although overbearing and conceited, exhibited through the whole cruise a wonderful degree of energy and was bold even to rashness in his explorations .... I much doubt if, with any other commander that could have been selected, we should have fared better or lived together more harmoniously, and I am confident that the Navy does not contain a more daring or driving officer."

POLAR STAR MAKES IT TO THE BIG TIME. Lincoln Ellsworth's Northrop Gamma POLAR STAR is part of the new show on The Golden Age of Flight which opened at the Smithsonian Institution's Air and Space Museum on April 5th. This sleek, silver bird made the first so-called Transantarctic flight in November-December 1935. Herbert Hollick-Kenyon, British-born Canadian from British Columbia, was Ellsworth's pilot on the 13-day trip which covered a distance of 2,200 miles, 1,200 of which was over unexplored territory. The POLAR STAR was an all-metal, cantilever, low-wing monoplane powered by a Wasp 600 horsepower engine, giving a top speed of 230 miles per hour. Equipped with wing flaps which reduced landing speed, it could land at 42 miles per hour. With a full load of gasoline, the POLAR STAR had a cruising range of 7,000 miles. The low wing was advantageous for landing in snow, as two men could scoop out trenches for the skis which would result in the wing resting on the snow surface.

AND THEN THERE WAS ONE. The Society Expeditions Cruises, Inc. of Seattle, Washington acquired the Lindblad EXPLORER on 1 February 1984, and will be using the ship on their Antarctic cruises starting in the 1984-85 austral summer. The WORLD DISCOVERER, the Society Expeditions' former Antarctic ship will not be making any more

Antarctic cruises, although she will be sailing in the South Pacific. We understand that the WORLD DISCOVERER will be painted blue and white, which would surprise a lot of whales and seals and penguins who have gotten used to seeing its beautiful red hull in Antarctic waters. Our Society has a lot of Lindblad alumni in its membership, close to 20, and their loyalty to Lindblad has been truly strong and steadfast. People like Dotte Larsen have made so many cruises on the EXPLORER that they almost qualified for crew pay. It is good to know that the EXPLORER will remain in service, flying under the flag of T. C. Swartz's Society Expeditions. Society Expeditions is currently preparing their brochure for their 1984-85 Antarctic cruises. Long live the EXPLORER! George Llano will stay on as lead lecturer.

BAD NEWS! GOOD NEWS! As you noted on the front page, the price of food and drink on the evening of the 18th is $21, which is rather rough on those whose lips never touch alcoholic beverages. The Academy does not allow cash bars, so, as long as we eat at the Academy, we must go along with an open bar. The good news is that we can all find free parking on the streets, have a one-stop evening (drinks-dinner-lecture), be in the elegant rotunda where there is plenty of room, and sit free in a nice auditorium for a learned Memorial Lecture. With the Polar Research Board meeting in session, we can be assured of nearly all their members being in attendance, which makes our group more legitimate and distinguished, while filling more seats in the auditorium. Even though it's a bit costly, once a year shouldn't hurt too many of us, and if you drink, you have a cheap evening.

METEORITES MORE PREVALENT AND LARGER. According to the Minutes of the Meteorite Working Group meeting held, at the Lunar and Planetary Institute in Houston on 6-8 April 1984, it was another great field season for Bill Cassidy and friends. They found a total of about 360 meteorites, but 100 may be one carbonaceous-chondrite found on a slope near Allan Hills. Bill credited this year's success to the extensive exposure of ice and the clear hard firn. The average specimen size was much larger this year. Two weeks were spent near Elephant Moraine where they found 200 specimens, including two irons, one broken, the other a piece of iron shale. The team that traversed towards Allan Hills were tent-bound by a storm for seven days, and towards the end experienced a tent fire. Paul Sipiera suffered second-degree burns, but they were able to evacuate him by helo within three hours.

MORE ON WIND CHILL. In the last issue we speculated on extreme wind chill equivalent temperatures (WCET), conjecturing that the minimum might be about -190°F in Antarctica and that Mt. Washington, N. H. was in all likelihood the most miserable spot in the world. Let's discuss Mt. Washington first, as we have some hard data for Mt. Misery. As you may recall from the last Bergy Bits, Williston, North Dakota had a WCET of -89.3°F on 24 December 1983, probably the lowest in the mid-west for the 24-25 December 1983 Siberian Express. When we received the Mt. Washington, N.H. December data from Staff Meteorologist Greg Gordon we discovered that our assumption was true, that the mountain was the worst spot on 24-25 December 1983. They had a WCET of-111.4°F, resulting from a temperature of -37°F with a wind of 75 kts. I admit that I took Bergy Bits' Liberty and did not penalize Mt. Washington for its excessive wind, treating 75 knots like it was 50 knots (the wind chill equation reverses at 50 knots, resulting in warmer values).

Gordon is one of those freaks who delights in challenging the mountain's worst weather on a one-on-one basis. He said that the worst he had ever experienced was on 8 January 1968 when it got down to -46.2°F with wind gusting to 130 mph, a WCET of -125.9°F. Mt. Washington had one other real miserable day, 29 January 1934, when the temperature got down to -46.5°F with a 100 mph wind, WCET of -126.4°F with Bergy Bits Liberty.

I propose that this is the all-time record low for the U.S., although I assume that some other mountain top like Mt. McKinley might have had lower values, but they had no instrumentation/observers.

Hourly data for Antarctica are hard to come by, but once upon a time I did copy hourly temperature and wind speed data for the South Pole for 1957 and 1958, so I checked them to see what I could find. The worst condition during the first two years of the Siple-built-station was on 19 June 1958 when the temperature at 1900 hours was -95.1°F and the wind was blowing 20 knots, giving a true WCET of -177.3°F.

To those of you who wrote in with your impressions of your most miserable day, we thank you. The Chamber of Commerce in Williston wrote Bergy Bits a great letter, asking for a public apology for all the nasty things we wrote about their miserable December weather. We're happy to apologize to good guys. You know, they had a population increase of 17% from 1980 to 1982, and we put that into a computer and found that if their growth rate continued at that pace, in forty years Williston would be the fourth largest city in the United States with a population of 2,564,871. Then people like me would know where Williston is located!

ANTARCTIC BRIEFINGS. Jim Barnes, environmental lawyer who is the Antarctica Project, is putting out a series of Antarctic briefing papers which should be of interest to many of you. Four have been published to date:

No. 1 - 3 April	Status of Antarctic Minerals Negotiations.
No. 2 - 9 April	A Non-commercial Approach to Antarctic Minerals.
No. 3 -16 April	An Antarctic Environmental Protection Agency.
No. 4 -23 April	Protected Areas in the Antarctic.

These briefing papers were prepared for distribution to media-type people, but individuals can obtain them for $2.00 from James N. Barnes, Executive Director, The Antarctica Project, 624 Ninth Street, N.W., Washington, D.C. 20001 (202-737-3600). I think they are excellent write-ups on subjects which a layman like myself doesn't get a chance to hear about very often. Another set of four briefings will be published in the near future, and these can be had for an additional two dollars. Following the Tokyo meetings in late May on minerals, ECO will publish in early July a series of articles on what they think transpired in Tokyo. These can be had for $5.00 from The Antarctica Project (address above). Good buys, all.

ED TODD SWEEPSTAKES. As we go to press, speculation reigneth supreme in Washington as to who will replace Ed Todd as Director of the Division of Polar Programs at NSF. We understand that twenty-five people filed their candidacies. Then we heard that some committee had picked out the five highest qualified. And the last rumor we picked up was that one name has been forwarded to higher levels for consideration and anointment. The Washington betting fraternity seems to think they know who that person is, but I would not count on anyone in this era where you don't have to pick the best qualified, only someone from the top echelon.

THANK HEAVENS ROBERT PEARY NEVER WENT TO THE ANTARCTIC. I imagine that nearly all of you folks saw the documentary in December on Cook and Peary, but probably not many of you know about an article in the Washington Post of 10 April 1976 by Joel Dreyfuss entitled "On Top of the World." It's a very interesting article, as the author interviewed at length a fellow by the name of Herbert L. Frisby in Baltimore who had dedicated a large part of his life to the cause of Matthew Henson. Frisby had made 25 trips inside the Arctic Circle, and frequently visited Henson in Harlem. According to Dreyfuss, Peary abandoned Henson after the North Pole, in spite of

having a long-time association, including a trip to Nicaragua and numerous trips to the Arctic. Presumably Peary's alienation developed after Henson became the first to reach what they were going to call the North Pole. Apparently Peary arrived some 45 minutes later. According to the article, Henson had somehow calculated the position as being the North Pole, which Peary confirmed after his arrival. Henson, so the article goes, extended his hand to congratulate Peary; Peary refused it. Henson became so wary of Peary that he removed all the cartridges from his gun and from Peary's because he was afraid that Peary would kill him! Peary never spoke to Henson on the return trip except to give him direct orders. Henson was bound by a promise to Peary that he would not lecture or write about the trip. He kept the vow for 12 years, but because of financial problems finally broke it, adding to Peary's hostility toward him. Henson was made a life-time member of the Explorer's Club in 1937, and Congress awarded him a special medal in 1945. President Eisenhower received him in the White House in 1954 shortly before his death in 1955. I doubt if there are very many people around who would be willing to bet the family jewels on whether either Cook or Peary reached the North Pole. But if it had not been for Peary supposedly reaching the North Pole, Amundsen would never have turned south and Captain Scott would have been the first to the South Pole. How history would have changed!

IVY LEAGUE PREPPIE GIVES 1984 MEMORIAL LECTURE. Dr. Richard P. Goldthwait, class of 1933 at Dartmouth, turned down Admiral Byrd's request to go on BAE II as a geologist. Our Society is very magnanimous, very broad-minded, and to show that we can overlook errors of judgment, we invited Dr. Goldthwait to present the 1984 Memorial Lecture. The title of his lecture may show why he didn't want to go to Little America II; he was really more interested in what lay at the bottom of glaciers than what glaciers looked like on the surface. However, to show he had no personal animosity towards the Byrd family, he later taught geology to the Admiral's son at Harvard! Dr. Goldthwait is one of three Ivy League Golden Ice Axes, glacial geologists with 50 years of experience who have made a comfortable living with their ice axes, namely, Bill Field, Link Washburn, and Dick Goldthwait. I think it is remarkable that these men overcame their Ivy League training, which should have normally led them into finance or big business, and ended up being men of snow and ice. And they have all achieved so much while remaining so humble, so kind, so thoughtful, and so dedicated. It is truly great having one of them as our Memorial Lecturer.

As a New Englander, I must point out with pride that Dr. Goldthwait is a good old Mt. Washington man, loyal to its core, and is, without a doubt, this nation's foremost authority on the geology of the White Mountains and the Presidential Range. He has worked nearly everywhere that it snows, with the exception of the Soviet Union. His name is synonymous with Glacier Bay where he conducted a 20-year program involving 25 field parties. Later on this summer, 23-30 August, he will be a special lecturer on a cruise to Glacier Bay when they will honor William Skinner Cooper, the founder of Glacier Bay National Park. Dr. Goldthwait worked on the Crillon Glacier in Alaska with Link Washburn, has done extensive work on Baffin Island, and, naturally, has been to Antarctica many times ('57-'58, '60, '63, '66, '70, and '73).

He left Brown University to go to The Ohio State University in 1946, and he did many great things in Columbus, although he isn't as well-known nationally as Woody Hayes. He was President of the Ohio Academy of Sciences; was a Governor of the Arctic Institute of North America; founded and directed the cradle of polar scientists — the Institute of Polar Studies; was chairman of the Geology Department; was Acting Dean of the College of Mathematics and Physical Sciences; and I believe he sang vociferously and sometimes on key in one of the local church choirs. The Ohio State University awarded him their Distinguished Service Medal. He was with the U.S. Army Air Force in 1942-46, and a recent communique from Dr. Goldthwait revealed to me

that he had done some work on wind chill when at Wright-Patterson Field during the war. We understand that he was involved in a post-World War II aborted trip to the Himalayas where they were going to find the highest mountain, but the Chinese said whatever they say when they mean "no", and they all had to come home. Maybe this was Dr. Goldthwait's only life failure, as his successes as a scholar, a teacher, an administrator, and a researcher carried over into his family life. We understand from an impeccable source that his most personable bride of all these years was most helpful when he was doing his doctoral dissertation — it seems that Kay did a lot of the mapping and drafting. A man with great foresight in picking his life partner! However, the Goldthwaits weren't forever in the field, as they produced one son and three daughters.

The National Park Service gave him their Service Award in 1983 for showing how the succession of climates and the progression of life development in the wake of re-treating glaciers give clues to why some glaciers advance, others retreat. He has a majestic mountain of 3815 meters lying 2.5 miles south of Mt. Dalrymple in the Sentinel Range. It doesn't bother me much that his mountain is 215 meters higher than mine; in fact, I stopped crying about it way back in 1983. But I tell you, it's truly an honor to lie in the shadow of Mt. Goldthwait; also to be so close to nearby Mt. Washburn. What great company! He's an honorary member of the Hilda Richardson Society, known in a few circles as the International Glaciological Society. And he serves on the International Quaternary Association's Commission on Quaternary Glacial Deposits - presumably an august and honorable group.

There appears to be only one flaw in Dr. Goldthwait's armor, and that is, what is this glacial geologist doing living in Anna Maria where the only ice to be found is in highballs? He admits to being a part-time beachcomber, going out each day to check sea level. He wants to be the first one in Anna Maria to know when that great ice mass in Antarctica starts to melt. However, like a good homing bird, Dr. Goldthwait does return each summer to his native state of New Hampshire. I presume he goes back there to see glaciated things and to get a fix to carry him through the long winter in Florida. He spends half of each day finishing up research studies which he never completed when he was doing such mundane things as being a dean, a chairman, a director. The price of fame and glory doesn't come cheaply!

Let's fill the lecture hall on the 18th! Dr. Goldthwait deserves a full house! A lot of us owe so much to him, so be there to join in the applause!

UPCOMING MEETINGS.

International Symposium on Circumpolar Health. Anchorage, Alaska. 13-18 May 1984.

National Academy of Sciences' Polar Research Board. Washington, D.C. 17-19 May.

PRB's Committee on Polar Biomedical Research. Washington, D.C. 31 May-1 June.

17th Antarctic Treaty Consultative Parties Meeting (Minerals Regime). Tokyo. 21-23 May.

Antarctic Politics and Marine Resources: Critical Choice for the 1980s.
University of Rhode Island. 17-20 June.

Post-FIBEX Workshop on Data Interpretation. University of Hamburg. July 1984.

18th Meeting of SCAR. Bremerhaven, F.R. 24 September-5 October 1984.

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Be sure to see the May 1984 National Geographic. Article by UCLA biologist, William N. Hamner entitled "Krill - Untapped Bounty From The Sea." Excellent photographs, particularly one of chin-strap penguins on an iceberg.