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ANTARCTICA: A MULTIMEDIA PRESENTATION, OCTOBER 10-31

Of interest to members of the Antarctic Society is a multimedia presentation on Antarctica which is being held at the Virginia Polytechnic Institute and State University at Blacksburg from October 10-31. Those members who live within driving distance of Blacksburg will want to visit the exhibit and attend one or more of the lectures that have been scheduled.

Central to the multimedia presentation is an exhibit of 14 paintings and two etchings by Daniel S. Lang and 45 full color photographs by Dr. Eliot Porter which will be on display in the art gallery of the Squires Student Center from October 10 to 31. The paintings and photographs are the result of Lang's and Porter's visit to Antarctica in 1970-75 under the auspices of the Office of Polar Programs of the National Science Foundation. They were on display for five days in Washington last January before being sent to St. Louis for exhibition. Dr. Eliot Porter is best known for his wilderness photographs which have appeared in his books, Birds of North America, Flow of Wilderness, Appalachian Wilderness, The Tree Where Man was Born, The African Experience, and others. Daniel Lang's paintings have been exhibited in New York, Rome, Chicago, and other major European and American cities. They were selected for the Antarctic project with the assistance of the National Endowment for the Arts.

In addition to the works of Porter and Lang there will be other visual and audio exhibits, including rocks and minerals and recordings made by Admiral Byrd.

The presentation, which is being sponsored by the Virginia Tech Union in conjunction with the Biology Department and the research Division of the University, will be opened with a reception at 1:00 p. m., Sunday, October 10, in the Squires Student Center. The opening lecture, "The Historical Involvement of Virginians in Antarctica," by Kenneth J. Bertrand, will follow at 2:00 p. m. Dr. Bertrand, president of the Antarctic Society, is author of Americans in Antarctica, 1775-1948, published by the American Geographical Society.

Other lectures are scheduled for later in the month. At 7:30 p. m., Thursday, October 14, Dr. James Craig and Dr. Edwin Robinson of the Geology Department of VPI & SU give lectures entitled, "The Frozen Continent" and "Antarctica's Potential for Resources." "Krill as a Source of Protein in Human Diets" will be given by Dr. Mary Alice McWhinnie, DePaul University, Chicago, and one of the first women scientists to work in Antarctica, at 7:30 p. m., Wednesday, October 20. Dr. Bruce C. Parker, Professor of Botany at VPI & SU and organizer of the Presentation, will give the closing lecture, "Conservation and the Environmental Impact in Antarctica, Past Present, and Future," on Wednesday, October 27, at 7:30 p. m. Dr. Robinson, who participated in the I.G.Y., is currently conducting research on the magnitude of

ocean tides in sea water beneath the Ross Ice Shelf. Dr. Craig visited Antarctica in 1974-75 at which time he discovered the mineral dihydrohalite, a form of sodium chloride which takes its unique crystalline form only at temperatures consistently below freezing. Dr. McWhinnie, a biological oceanographer, is an expert on reproduction and metabolism of marine invertebrates. Fortunately, she has done a great deal of work on krill, a small shrimp-like animal which is a vital link in the Antarctic food chain and which some nations are contemplating harvesting.

The Antarctic Presentation is being staged as part of the Virginia Bicentennial Celebration. This is highly appropriate, for American activity in Antarctica began with the establishment of a Massachusetts whaling fleet in exile in the Falkland Islands in 1775. By 1793 Americans had crossed the Antarctic Convergence to hunt fur seals in South Georgia and fur and elephant seals in Kerguelen. It can truly be said that American interests in the south polar regions are as old as the nation.

It is also appropriate that Virginia Tech should sponsor such a presentation. Admiral Richard E. Byrd is a Virginian who comes to mind immediately when one thinks about Antarctic exploration. At least two officers of the Wilkes Expedition were Virginians. Matthew Fontaine Maury, as head of the U. S. Naval Observatory from 1842 to 1861, frequently urged the importance of Antarctic exploration on the Congress and on the Secretary of the Navy. He was the first to advocate international cooperation in Antarctic exploration. A number of men who played prominent roles in unveiling the Antarctic in the last few decades have been long-time residents of Virginia. Moreover, three faculty members and several students at VPI & SU are currently involved in Antarctic research.

THE BIRDS OF THE SOUTHERN OCEANS

George E. Watson¹

The configuration of the land and ocean has profoundly influenced the kinds of birds that inhabit the southern end of the world. In contrast to the Arctic where extensive land areas extend north of 70° N. and encircle a central ice-covered ocean, the glacier-covered core of the Antarctic is a mountainous continent that extends north to 65° S. and is surrounded by continuous open ocean between 65° and 45° South. Only in the Antarctic Peninsula and island of the Scotia Ridge is there significant land between these parallels. Elsewhere, widely scattered, small, ice-covered islands dot the roaring 40's and howling 50's.

The Antarctic and sub-Antarctic are inhabited almost exclusively by seabirds or coastal birds that derive all their food either directly or at most one step removed from the sea. Song birds and shorebirds, which are so conspicuous in the Arctic, occur only on a few of the more temperate sub-Antarctic islands.

1. Dr. Watson, Curator of Birds of the National Museum of the Smithsonian Institution, has provided this summary of the illustrated lecture he gave to the Antarctic Society, May 20. Lacking illustrations in the Newsletter, he has had to alter the form of this summary from the lecture. Readers seeking an amplification of either are referred to the following: George E. Watson, Birds of the Antarctic and Sub-Antarctic, Antarctic Research Series, American Geophysical Union, Washington, B. C. 1975. George E. Watson, et.al., Birds of the Antarctic and Subantarctic, Antarctic Map Folio Series, No. 14, American Geographical Society, New York, 1971. The former is an illustrated handbook; the latter is a set of bird distribution maps.

The open seas of the sub-Antarctic are dominated by tube-nosed albatrosses and petrels that spend most of their lives at sea, only coming to shore to breed. They course over the windswept waters on long narrow wings, searching for squid and fish and often follow ships for a free handout of offal or garbage. The Wandering Albatross is among the largest and most majestic of birds on the wing, with an expanse just short of 12 feet. The two species of smaller mollymawks look like giant gulls and the eerie yet graceful sooty albatrosses haunt ships silently. Ubiquitous giant fulmars play in the wake gliding on stiff wings. Several species of gadfly petrels and shearwaters bank and soar gracefully over the waves. Vast flocks of prions of several virtually indistinguishable species work the waters. Tiny storm petrels dance on the surface, diving petrels plunge through the waves on rapidly beating wings. The seas in some areas teem with food and abound in birds. But, it is around the widely scattered islands where they nest that birds are most abundant. Islands, such as Marion, the Crozets, Kerguelen, and Heard in the Indian Ocean, South Georgia and the Falklands in the Atlantic, and Macquarie and several other islands south of New Zealand are terrestrial oases where birds can lay eggs and raise young, for marine birds are not wholly pelagic; they must return to land to reproduce.

Larger species such as albatrosses and giant fulmars nest completely exposed and need long runways to head into the wind for takeoffs, whereas smaller petrels and shearwaters burrow in soft soil or hide in rock crevices. Penguins of several species abound, and cormorants, a skua, a gull and two terns complete the seabird inventory. Ducks inhabit most of these islands, save Heard; the Indian Ocean islands have a white sheathbill, a peculiar piratical and scavenging shorebird of obscure relationships and vulgar habits. A large pipit, a songbird, inhabits the tussock grass and shores of South Georgia and several Northern Hemisphere songbirds that were introduced in New Zealand have become established naturally on Macquarie. On the latter island, alas, a native rail and a parakeet have become extinct. Incidentally, they are the only permanent victims of 19th century exploitation of the islands by sealers and whalers. Fortunately other races of these two species persist on other nearby islands. Although penguins often sweetened the oil rendering cauldrons when whales became scarce, their populations have recovered. Rats, cats, dogs, pigs, and rabbits ravage some of the smaller nesting seabirds, or they have caused erosion of soft soil and thus reduced the habitat for nest burrows. On most islands, however, birds can still keep a foothold in inaccessible cliffs or offshore stacks.

South of the Antarctic convergence albatrosses, gadfly petrels and shearwaters are scarce, but a small coterie of other species make up the huge populations that breed on the Antarctic continent and Peninsula and southern islands of the Scotia Ridge. Five penguins breed in immense rookeries and the smell of their guano and the sound of their raucous voices give distant evidence of their presence. Only two penguins, the Adelie and Emperor, occur at present on the continent proper although the Chinstrap seems to be extending its range around the continent, perhaps now consuming krill once eaten by herds of vanished Blue Whales. The male Emperor Penguin is remarkable for incubating its egg continuously for over two months in the dead of winter while fasting and losing 30% of its weight. The rookeries are mostly on fast shelf ice and the bird holds the single egg on its feet, kept warm by an overhanging flap of vascularized belly blubber.

The Southern Giant Fulmar, also known as the Stinker because of its carrion feeding, is joined by four other species of fulmarine petrels including the familiar checkerboard-patterned, ship-following Cape Pigeon and the tiny all white Snow Petrel. The South Orkneys and the South Shetlands are the southern most breeding outposts of the Antarctic Priori and the Black-bellied Storm Petrel, but even smaller sparrow-sized Wilson's Storm Petrel nests all around the continent in rock crevices. It must wait until its nest sites are free from snow and ice in summer. Unseasonable heavy snow

can ruin breeding. Nevertheless, millions of the birds migrate north into the North Atlantic Ocean each year.

Anvers and Adelaide Islands at about 65° and 68° S., respectively, on the west side of the Antarctic Peninsula, are the extreme southern limits of breeding by American Sheathbills, Southern Black-backed Gulls, Antarctic Terns and Blue-eyed Shags or Cormorants. Although the gulls have been reported as vagrants at McMurdo, they may well have only colonized the Scotia Ridge islands and the Peninsula by following the sealers during the early 19th century. The familiar plundering skua presents an interesting speciation problem in Antarctica. The large Brown Skua inhabits most of the sub-Antarctic islands, while the South Polar Skua, which is smaller and even delicate by comparison, occurs on the continent. The two overlap and breed side by side on the South Shetland Islands and Antarctic Peninsula. They interbreed fairly often but not enough to swamp out species differences. On Anvers Island, I found individual pairs of Brown Skuas nesting near small groups of penguins which they seemed to be protecting for their own maurauding. I found penguin eggshells and bones all about their nests. South Polar Skuas were nesting nearby in loose groups on the hillsides and they were feeding krill to their chicks which seemed to be a week or two younger than those of the Brown Skuas. A South Polar Skua banded on Anvers Island and recovered in Greenland reveals that this species migrates.

Lastly, the Antarctic avifauna includes the all-time long distance champion migrant, the Arctic Tern. This 125 gram (4+ ounce) swallow-tailed bird breeds north of the Arctic Circle in North America and Eurasia. North American birds cross the Atlantic to Europe, fly south down the coast of West Africa, and make a landfall on Antarctica just east of the Weddell Sea in November. They then work their way westward and molt twice rapidly in the Weddell Sea and South Shetlands before returning north again in April, probably by way of South America. The round trip can be 22,000 miles, but maybe it is worth it if you can feed anytime during 24 hours of daylight almost all year! Certainly Arctic Terns are successful, abundant birds.

Conservation is a problem everywhere that man goes for exploitation. Thus far, except for the now ending plundering of seals and whales, scientists and their support forces and a few intrepid but wealthy tourists are the only exploiters of Antarctica. We have an international treaty that features conservation measures signed and strictly adhered to by all nations that use the frozen continent. Except for a few instances where research station have been built on the sites of penguin rookeries, bird populations are healthy and unmolested. Antarctic birds are wonderfully easy to watch and enjoy for they are remarkably tame. One can quietly approach to within a few feet of even an incubating skua. But this same innate trusting tameness could be the birds's undoing if the treaty and its conservation provisions are not renewed in 1989 when it expires. Let us hope that man's greed will not extend to all parts of our globe and that the birds of the frozen continent will persist for the enjoyment and enlightenment of our children's children.

A MID-WINTER DAY BICENTENNIAL GREETING

On the following page is a copy of the letter that was sent to all stations, foreign as well as our own, by President Gerald R. Ford as a Bicentennial mid-winter day greeting. The letter was also read to members of the Antarctic Society who were celebrating mid-winter day with the annual garden party at Stronghold on Sugar Loaf Mountain, Frederick County, Maryland.

THE WHITE HOUSE
WASHINGTON

June 16, 1976

Discovery and scientific exploration of the Antarctic account for one of the most remarkable legacies of the past two hundred years.

In the United States, we take special pride during our Bicentennial observance in this nation's dynamic role in Antarctic exploration and in the accomplishments of great Americans like Nathaniel Palmer, Charles Wilkes and Richard Byrd. In the best tradition of these famous explorers, the members of the international scientific community wintering in the Antarctic expand even further our knowledge of this magnificent region. We are equally proud of the fellow citizens who are part of this rewarding international effort.

Mindful that we are a nation of nations whose diverse ancestral heritage binds us in a unique way with the other participating countries, we invite all who winter in Antarctica this year to join in celebrating the two hundredth birthday of United States Independence. We hope this will be an especially productive and satisfying year for each of you. We are confident that the new findings and new friendships which will result will both benefit all mankind.

A handwritten signature in dark ink, appearing to read "Gerald Ford", written in a cursive style.