Vol 20, November 2005

NEWSLETTER FOR THE

Canadian Antarctic Research Network

Inside

Upper Victoria Valley, McMurdo Dry Valleys, Antarctica, January and November, 2003

Joel Barker

As a participant in the Arctic–Antarctic Exchange program with Dr Fitzsimons from the University of Otago, New Zealand, I have twice been able to conduct research on Victoria Upper Glacier (VUG) and smaller cirque glaciers in the McMurdo Dry Valleys. The research was part of a larger-scale investigation of organic carbon dynamics in glacier systems.

Victoria Upper Glacier abuts permanently ice-covered "Lake Upper Victoria", and it is likely that the glacier overran organic matter in lake sediments during previous advances. During January and November, 2003, ice was sampled across the transition between meteorically derived glacier ice and underlying basal ice at the terminal ice cliff at VUG. Two shallow ice cores were also collected from the glacier surface. The objectives were to compare and contrast organic carbon abundance and characteristics between glacier and basal ice from the same glacier. Results indicate dissolved organic carbon exists in detectable quantities in both types of ice (1.8–46.7 ppm), that the distribution of dissolved organic carbon is heterogeneous, but that quantities are generally higher in the basal ice of VUG than in the glacier ice. Furthermore, fluorescence spectroscopic analysis revealed that basal ice contained fluorophores indicating the presence of humic material, likely from overrun organic matter in lake sediments. The humic material fluorophore was largely absent from glacier ice. Furthermore, both glacier and basal ice contained a fluorophore indicative of the presence of the amino acid tyrosine. The presence of tyrosine suggests that proteins exist in the ice and the lack of any correlation between the tyrosine and humic material fluorophores indicates that protein synthesis may be occurring within the ice rather than being the result of atmospheric transport to the glacier.

Victoria Upper Glacier with "Lake Upper Victoria" in the foreground. The basal accretion of lake sediments to the sole of the glacier may have incorporated dissolved organic carbon into the basal ice.

The boundary between basal ice (darker) and overlying glacier ice at VUG. DOC concentrations are generally higher, and humic material more common, in the basal ice.

The biogeochemical cycling of organic carbon (OC) has important implications for aquatic-system ecology because the abundance and molecular characteristics of OC influence water-column light penetration, contaminant transport and bioavailability, and determine its suitability as a substrate for microbial metabolism. The results of this investigation provide insight into glacier-system organic-carbon cycling and potential organic-carbon export to downstream aquatic ecosystems. At VUG, organic carbon from sediment or lacustrine sources that is frozen onto the sole of the glacier occurs in higher concentrations than that which is deposited atmospherically. However, atmospherically derived glacier ice accounts for a larger volume of the net ice than does basal ice, so atmospherically deposited organic carbon may be more significant. The presence of amino acid fluorophores in both glacier and basal ice indicates that active microbial activity may be occurring within the ice at VUG, likely in thin films of water at ice crystal boundaries. The export of amino acids with ice melt represents a flux of highly reactive organic carbon to downstream ecosystems and may play an important role in downstream aquatic system ecology.

I would like to thank Antarctica New Zealand for logistical support, CCAR and the Polar Continental Shelf Project for supporting the Arctic–Antarctic Exchange Program, and NSERC, Martin Sharp and Sean Fitzsimons for financial support.

Joel Barker is a graduate student working with Prof. Martin Sharp in the Department of Earth and Atmospheric Sciences at the University of Alberta (jdbarker@ualberta.ca).

Canadians in Antarctic Place-Names

Geoffrey Hattersley-Smith

Canadians have long been valued members of foreign Antarctic expeditions. In *Some Canadians in the Antarctic* (Hattersley-Smith, 1986), I summarized the parts played by a dozen Canadians on various expeditions.

As a country, Canada had no commitment to Antarctic research until 1998, when the country became a full member of the Scientific Committee on Antarctic Research (SCAR), with commitment to a recognized national programme of research. Canada has never established an Antarctic station, but relies on the facilities provided by foreign stations.

In the following list of Antarctic place-names, I give the exact locations of the features, the persons commemorated with biographical dates (as available), and the expeditions or operations on which they served. Many of the Canadians commemorated were born outside Canada. I have included (in square brackets) a few non-personal names of Canadian association. I have not attempted to seek out names of crewmen or ships of Newfoundland sealing fleets active in Antarctic waters in the early 1900s. (See map on page 20)

1 **Barnes Glacier:** 67°32′S, 66°19′W, flows west into Bourgeois Fjord, Fallières Coast, Graham Land. Named after Prof. Howard Turner Barnes (1873–1950), physicist.

2 **Barnes, Mount:** 77°38′S, 163°35′E, 1200 m, on west side of New Harbour, Victoria Land. Named as above.

3 [**Beaver Glacier:** 67°02′S, 50°40′E, flows west into Amundsen Bay between Ragged Peaks and Mount Gleadell. Named after the de Havilland Beaver aircraft, manufactured in Canada, used by ANARE in coastal exploration.]

4 [**Beaver Island:** 67°07′S, 50°47′E. Named from its proximity to Beaver Glacier.]

5 [**Beaver Lake:** 70°48′S, 68°20′E, situated just east of the Aramis Range, Prince Charles Mountains. Discovered in 1956 by ANARE personnel who used it extensively as a landing area for their de Havilland Beaver aircraft, after which it was named.]

6 [**Beaver Rocks:** 63°41′S, 59°21′W, rocks rising 29 m a.s.l., northeast of Cape Kjellman, Trinity Peninsula. Surveyed by FIDS, 1960–61, and named after the BAS de Havilland DHC-2 Beaver aircraft.]

7 **Bekker Nunataks:** 64°42′S, 60°49′W, SSW of Cape Worsley, Nordenskjöld Coast, Graham Land. Named after Lt Col Mieczylaw Gregory Bekker, RCE, over-snow vehicle engineer.

8 **Bombardier Glacier:** 64°29′S, 60°04′W, flowing SE from Detroit Plateau to Nordenskjöld Coast. Named after J. Armand Bombardier, over-snow vehicle engineer.

9 **Burd, Cape:** 63°39′S, 57°07′W, southwest point of Tabarin Peninsula, Trinity Peninsula, Graham Land. Named after Lieut. Oliver R. Burd, RCNVR (1921–48), FIDS Base Leader and meteorological observer, Station Argentine Islands, 1947–48; meteorological observer, Station Hope Bay in 1948 until he died in a fire at that station in November of that year.

10 **Burden Passage:** 63°08′S, 56°32′W, between d'Urville Island and Bransfield Island, Trinity Peninsula, Graham Land. Named after Capt. Eugene Moores Burden (1892–1979), Master of the FIDS charter ship *Trepassey*, 1946–47, who made the first navigation of the passage.

11 **Bursey, Mount:** 76°01′S, 132°38′W, 2780 m, at east end of Flood Range, Marie Byrd Land. Named after Jacob Bursey, dog-driver on Byrd Antarctic Expedition, 1928–30, and on United States Antarctic Service, 1939–41.

12 **Bursey Icefalls:** 75°59′S, 132°38′W, on north side on Mount Bursey, Flood Range, Marie Byrd Land. Named as above.

13 **Campbell Glacier:** 74°25′S, 164°22′E, flowing southeast between Deep Freeze Range into Terra Nova Bay, Victoria Land. Named after Capt. Victor Lindsay Arbuthnot Campbell, DSO (and bar), OBE, RN (1875–1956) of the *Terra Nova* Expedition, 1910–13 (Capt. R.F. Scott, CVO, RN).

14 **Campbell Glacier Tongue:** 74°36′S, 164°24′E, seaward extension of Campbell Glacier. Named as above.

15 [**Canada Glacier:** 77°37′S, 162°59′E, on north side of Taylor Valley, Victoria Land. Named by the *Terra Nova* Expedition, 1910–13, in honour of Sir Charles Wright (see below).]

16 [**Canada Stream:** 77°37′S, 163°03′E, flows from Canada Glacier. Named in association with the glacier.]

17 **Cheesman Island:** 69°44′S, 75°05′W, off the north coast of Charcot Island. Named after Flt Lt Silas Alward Cheesman, RCAF (1900–58), pilot on Sir Hubert Wilkins' flight in 1929.

18 **Coleman, Mount:** 77°32′S, 163°24′E, 1110 m a.s.l., stands immediately east of Commonwealth Glacier at the head of New Harbor, Victoria Land. Named for Prof. Arthur Philemon Coleman (1852–1939), geologist, University of Toronto, by C.S. Wright (see below).

19 **Davies, Cape:** 71°46′S, 100°23′W, at northeast end of Hughes Peninsula, Thurston Island. Named after Dr Frank Thomas Davies, FRSC (1904–81), physicist on Byrd Antarctic Expedition, 1928–30.

20 **Deville Glacier:** 64°48′S, 62°31′W, flows west into Andvord Bay, Dance Coast, Graham Land. Named after Edouard Gaston Daniel Deville (1849–1924), Surveyor General of Canada, photogrammetrist.

21 **Douglas, Cape:** 54°46′S, 36°00′W, at southeast end of Salvesen Range, South Georgia. Named after Prof. George Vibert Douglas, MC, FRSC, geologist on Shackleton-Rowett Antarctic Expedition, 1921–22.

22 [**Eliason Glacier:** 64°13′S, 59°29′W, flows south into Larsen Inlet, Nordenskjöld Coast, Graham Land. Named after the Eliason motor toboggan, invented in Sweden in 1942 and later made by Carter Bros Ltd, Waterloo, Ontario.]

23 **Falconer, Mount:** 77°35′S, 163°06′E, 810 m a.s.l., surmounts Lake Fryxell on the north wall of Taylor Valley, between Mount McLennan and Commonwealth Glacier. Named after Sir Robert Alexander Falconer, KCMG, FRSC (1867–1943), President of the University of Toronto, by C.S. Wright (see below).

24 **Harrison Ice Ridge:** 79°30′S, 146°00′W, ice ridge between Echelmeyer and MacAyeal Ice Streams on the Shirase Coast, Marie Byrd Land. Named after Prof. William D. Harrison (b. 1936), Geophysics Institute, University of Alaska, Fairbanks, AK; USAP investigator of ice-flow dynamics in the margin of nearby Whillans Ice Stream, 1992–93 and 1993–94, and at Siple Dome, 2001–02.

25 **Hattersley-Smith, Cape:** 71°51′S, 61°04′W, on Condor Peninsula, Black Coast, Graham Land. Named after Dr Geoffrey Francis Hattersley-Smith, FRSC, Base Leader and glaciologist, FIDS Station Admiralty Bay, King George Island, South Shetland Islands (1948–49).

26 **Holdsworth Glacier:** 86°30′S, 154°00′W, tributary of Bartlett Glacier, Queen Maud Mountains. Named after Dr Gerald Holdsworth (b. 1939), with US Antarctic Research Program as geologist McMurdo Station, Ross Sea, 1965–66.

27 **Holdsworth, Mount:** 72°08′S, 166°35′E, in Monteath Hills, Victory Mountains, Victoria Land. Named after Dr Gerald Holdsworth, Leader and geologist of the northern party of the New Zealand Federated Mountain Clubs Antarctic Expedition, 1962–63.

28 **Howard Nunataks:** 77°30′S, 87°00′W, at northwest corner of Sentinel Range, Ellsworth Mountains. Named after Patrick M. Howard, engine mechanic on Lincoln Ellsworth's trans-Antarctic flight in November 1935.

29 **Innes-Taylor, Mount:** 86°51′S, 154°27′W, 2730 m, on south side of Poulter Glacier, Queen Maud Mountains, Transantarctic Mountains. Named after Lt Col Alan Innes-Taylor of the Byrd Antarctic Expedition, 1934–35.

30 **Jardine Peak:** 62°10'S, 58°30'W, 285 m, SSW of Point Thomas, Admiralty Bay, King George Island. Named after Daniel Jardine (1927–94), geologist, FIDS Station Admiralty Bay, King George Island, 1949–50.

31 **Kenyon Peninsula:** 68°27'S, 63°33'W, between Mobiloil Inlet, Bowman Coast, and Revelle Inlet, Wilkins Coast, Named after Hon. Air Cdre Herbert Hollick-Kenyon, RCAF (1897–1975), pilot on Lincoln Ellsworth's trans-Antarctic flight in November 1935.

32 **Koerner Bluff:** 76°00'S, 133°04'W, on northwest side of Mount Bursey, Flood Range, Marie Byrd Land. Named after Dr Roy Martindale ("Fritz") Koerner (b. 1932), USARP glaciologist with the Byrd Station Traverse, 1962–63.

33 **Koerner Rock:** 63°19'S, 57°06'W, south of Mount Bransfield, Trinity Peninsula, Graham Land. Named after Dr Roy Martindale ("Fritz") Koerner (b. 1932), meteorological observer and glaciologist, FIDS Station Hope Bay, 1958–60.

34 **Lamb, Cape:** 63°54'S, 57°37'W, SW point of Vega Island, Trinity Peninsula, Graham Land. Named after Dr Ivan Mackenzie Lamb (1911–90), Operation "Tabarin" botanist, Station Port Lockroy, 1943–44, and Station Hope Bay, 1944–45; Leader of biological expedition to Melchior Islands, Palmer Archipelago, Graham Land, 1964–65.

35 **Lenton Bluff:** 79°00'S, 28°13'W, NE of Jeffries Glacier, Theron Mountains, Coats Land. Named after R.A. Lenton (see below).

36 **Lenton Point:** 60°44'S, 45°36'W, on NE side of Clowes Bay, Signy Island. Named after Ralph Anthony Lenton (1923–86), radio operator, FIDS Station Signy Island, 1947–48; Station Admiralty Bay, 1948–50; Base Leader and radio operator, Deception Island, 1951–52; Station Port Lockroy, 1952–53; Station Faraday, 1954–55; with Trans-Antarctic Expedition as Deputy Leader, radio operator and builder at Station Shackleton, Coats Land 1955–56: radio operator on trans-polar journey, 1957–58.

37 **Løken Moraines:** 66°17'S, 110°37'E, inland from Windmill Islands, Budd Coast, Australian Antarctic Territory. Named after Dr Olav Løken (b. 1931), glaciologist at USARP Wilkes Stations, 1957.

38 **Lymburner, Mount:** 77°26'S, 86°30'W, 1940 m, at north end of Sentinel Range, Ellsworth Mountains. Named after J.H. Lymburner, assistant pilot on Lincoln Ellsworth's trans-Antarctic flight of November 1935.

39 **Macleod Point:** 64°06'S, 61°58'W, SE point of Liège Island, Palmer Archipelago, Graham Land. Named after Prof. John James Rickart Macleod, FRSC, FRS (1876–1935), Nobel Laureate in medicine.

40 **Mansfield Point:** 60°39'S, 45°44'W, on Norway Bight, Coronation Island, South Orkney Islands. Named after Dr Arthur Walter Mansfield (b. 1926), meteorological observer FIDS Station Grytviken, 1951–52; Base Leader, biologist and meteorological observer, Station Signy Island, 1952–53.

41 **McLennan, Mount:** 77°35'S, 162°56'E, 1770 m a.s.l., on north side of Taylor Glacier, Victoria Land. Named for Prof. John McLennan (1876–1935), physicist, University of Toronto, by C.S. Wright (see below).

42 **Müller Ice Front:** 67°13'S, 66°50'W, seaward face of Müller Ice Shelf (see below).

43 **Müller Ice Shelf:** 67°15'S, 66°52'W, off Lallemand Fjord, Loubet Coast, Graham Land. Named after Prof. Fritz Müller (1926–80), Swiss-Canadian glaciologist.

44 [**Muskeg Gap:** 64°25'S, 59°41'W, east–west pass on Sobral Peninsula, Nordenskjöld Coast, Graham Land. Named after the Bombardier Muskeg tractor.]

45 [**Nodwell Peaks:** 64°21'S, 59°46'W, NW of Larsen Inlet, Nordenskjöld Coast, Graham Land. Named after the Nodwell tracked carrier made by Robin-Nodwell Mfg Ltd, Calgary, Alberta.]

46 [**Otter Highlands:** 80°38′S, 30°00′W, a group of peaks and ridges extending northwest–southeast for 17 miles from Mount Lowe to Wyeth Heights, west of Blaiklock Glacier and forming the western end of the Shackleton Range. Surveyed by the CTAE in 1957 and named after the de Havilland Otter aircraft which supported the CTAE.]

47 [**Otter Plain:** 71°30′S, 7°30′E, an ice plain between Sigurd Knolls on the north and the Mühlig-Hofmann and Drygalski Mountains on the south, Queen Maud Land. Plotted from surveys and air photos by the NorAE (1956–60) and named after the de Havilland Otter aircraft used by the expedition.]

48 [**Otter Rock:** 63°38′S, 59°12′W, a high distinctive rock lying 3 miles north of Notter Point, Trinity Peninsula. Named after the de Havilland Otter aircraft used by the BAS.]

49 **Paterson, Mount:** 54°39′S, 36°07′W, in central Salvesen Range, South Georgia. Named after Dr William Stanley Bryce Paterson (b. 1924), assistant surveyor on the South Georgia Survey, 1955–56.

50 **Pawson Peak:** 62°11′S, 58°28′W, 250 m, on west side of Admiralty Bay, King George Island, South Shetland Islands. Named after Kenneth Pawson (b. 1923), FIDS meteorological assistant, Station Port Lockroy, Anvers Island; assistant surveyor, Station Admiralty Bay, King George Island.

51 **Ramseier Glacier:** 80°30′S, 156°18′E, a steep cirque glacier 9 km long, flows south-west to join Byrd Glacier just east of Mount Rummage. Named by US-ACAN after René O. Ramseier, glaciologist at McMurdo Station and at Pole Station in 1960–61 and 1961–62.

52 **Reece, Mount:** 63°50′S, 58°32′W, 1085 m, a sharp, ice-free peak, four miles west of Pitt Point and the highest point of a ridge forming the south wall of Victory Glacier on the south side of Trinity Peninsula. Charted in 1945 by the FIDS and named for Alan Reece, leader of the FIDS Deception Island base in 1945, and meteorologist and geologist at the Hope Bay base in 1946. Reece, a member of the NBSAE, 1949–52, was killed in an airplane accident in the Canadian Arctic in 1960.

53 **Reece Valley:** 72°41′S, 0°22′E, an ice-filled valley between Gavlen Ridge and Nupskåpa Peak, in the south part of the Sverdrup Mountains, Queen Maud Land. Mapped by Norwegian cartographers from surveys and air photos by NBSAE (1949–52) and air photos by the Norwegian expedition (1958–59). Named for Alan Reece, geologist with the NBSAE (1949–52) and earlier with the FIDS.

54 **Roots Heights:** 72°37′S, 0°27′E, in Sverdrup Mountains, Dronning Maud Land. Named after Dr Ernest Frederick Roots, OC, FRSC (b. 1923), chief geologist on the Norwegian-British-Swedish Antarctic Expedition, 1949–52.

55 **Roots, Mount:** 54°28′S, 36°23′W, in Allardyce Range, South Georgia. Named after James Walter Roots (b. 1927), member of the South Georgia Survey, 1951–52.

56 **St Louis, Mount:** 67°09′S, 67°30′W, on Arrowsmith Peninsula, Loubet Coast, Graham Land. Named after Col Peter Borden St Louis, MBE, RCAF (b. 1923), Norseman pilot with FIDS, 1949–50.

57 **Sheppard Nunatak:** 63°22′S, 56°58′W, north entrance point of Hope Bay, Trinity Peninsula, Graham Land. Named after Capt. Robert Carl Sheppard (1897–1954), Master of the Operation "Tabarin" charter ship *Eagle,* 1934–45, and of the FIDS charter ship *Trepassey,* 1945–46.

58 **Sheppard Point:** 63°23′S, 56°58′W, north entrance point of Hope Bay, Trinity Peninsula, Graham Land. Named as above.

59 [**Skidoo Nunatak:** 64°23′S, 59°45′W, south of Nodwell Peaks, Nordenskjöld Coast, Graham Land. Named after the Bombardier Skidoo snowmobile.]

60 **Stefansson Sound:** 69°28′S, 62°25′W, extends north–south between Hearst Island and Black Coast, Graham Land. Named after Dr Vilhjalmur Stefansson (1879–1962), Arctic explorer, ethnologist and writer.

61 **Taylor, Mount:** 63°25′S, 57°07′W, 1000 m, south of Hope Bay, Trinity Peninsula, Graham Land. Named after Dr Andrew Taylor, OC (1907–93), as Major, RCE surveyor at Operation "Tabarin" Station Port Lockroy, Anvers Island, 1944–45, and Commander of the operation at Hope Bay, Trinity Peninsula, 1945–46.

62 **Taylor Dome:** 77°40′S, 157°40′E, 2400 m, in Lashly Mountains, Victoria Land. Named after T.G. Taylor (see below).

63 **Taylor Glacier:** 67°27′S, 60°50′E, near west end of Mac. Robertson Coast, Australian Antarctic Territory. Named after T.G. Taylor (see below).

64 **Taylor Glacier:** 77°44′S, 162°10′E, flows into Taylor Valley. Named after T.G. Taylor (see below).

65 **Taylor Valley:** 77°37′S, 163°00′E, ice-free valley north of Kukri Hills, Victoria Land. Named after Prof. Thomas Griffith Taylor, FRSC (1880–1963), geologist on the *Terra Nova* Expedition, 1910–13 (Capt. R.F. Scott, CVO, RN).

66 **Waddington Glacier:** 78°03′S, 161°27′E, flows WNW along the south side of Ugolini Peak, Colwell Massif, to enter Palais Glacier, Victoria Land. Named after Prof. Edwin D. Waddington (b. 1950), geophysicist, University of Washington; from 1990, field investigator at Taylor Dome in an extended program of glacier geophysical studies.

67 **Whillans, Mount:** 84°27′S, 64°15′W, 870 m, in Andersen Hills, Patuxent Range, Pensacola Mountains. Named after Prof. Ian Morley Whillans (1944–2001), geologist at USARP Palmer station in winter 1967 and in subsequent seasons.

68 **Whillans Ice Stream:** 83°40′S, 145°00′W, flows west to Gould Coast between Mercer and Kamb Ice Streams. One of several major ice streams draining from Marie Byrd Land into the Ross Ice Shelf, it is identified as "Ice Stream B" in reports by the SPRI-NSF-TUD airborne radio-echo sounding programme (1967–79) and USAP from 1984. The name was changed by US-ACAN in 2001 to honour Prof. Ian Morley Whillans (1944–2001) glaciologist, Byrd Polar Research Center and Department of Geological Sciences, Ohio State University, whose work in Antarctica spanned the years from 1967 until his death. Whillans had a central role in recognizing that these ice streams hold the key to determining the stability of the West Antarctic ice sheet.

69 **Wilson Mountains:** 72°15′S, 61°40′W, east of Du Toit Mountains, Black Coast, Graham Land. Named after Prof. John Tuzo Wilson, CC, OBE, FRSC, FRS (1908–93), geophysicist and continental-drift theorist.

70 **Wright, Mount:** 71°33′S, 169°10′E, 1800 m, in north part of Admiralty Mountains, Victoria Land. Named after Sir Charles (Seymour) Wright, KCB, OBE, MC (1887–1975), physicist and glaciologist, *Terra Nova* Expedition, 1910–13 (Capt. R.F. Scott, CVO, RN).

71 **Wright Bay:** 66°34′S, 93°37′E, on Queen Mary Coast, Australian Antarctic Territory. Named as above.

72 **Wright Lower Glacier:** 77°25′S, 163°00′E, in mouth of Wright Valley, Victoria Land. Named as above.

73 **Wright Upper Glacier:** 77°32′S, 160°35′E, at west end of Wright Valley, Victoria Land. Named as above.

74 **Wright Valley:** 77°31′S, 161°50′E, mainly ice-free east–west valley in Victoria Land. Named as above.

I apologize for any Canadians thus commemorated that I may have omitted from the above list*.

* Please send information on omissions to simon.ommanney@sympatico.ca.

References

Alberts, F.G., 1995. *Geographic names of the Antarctic. Second edition.* Arlington, VA, U.S. National Science Foundation. U.S. Board on Geographic Names, 834 pp.

Hattersley-Smith, G., 1980. History of place-names in the Falkland Islands Dependencies (South Georgia and the South Sandwich Islands). *Br. Antarct. Surv. Sci. Rep.* 101, 112 pp.

Hattersley-Smith, G. 1986. Some Canadians in the Antarctic. *Arctic,* 39(4), 368–369.

Hattersley-Smith, G., 1991. The history of place-names in the British Antarctic Territory. *Br. Antarct. Surv. Sci. Rep.* 113, 670 pp.

Italy, Programma Nazionale di Ricerche in Antartide, 2000. *Composite gazetteer of Antarctica.* Rome, Programma Nazionale di Ricerche in Antartide and Scientific Committee on Antarctic Research, Geoscience Standing Scientific Group (www3.pnra.it/SCAR_GAZE).

Dr Geoffrey Hattersley-Smith, a glaciologist with the Defence Research Board who was responsible for Operations Hazen and Tanquary on Ellesmere Island, Nunavut, is retired and living in Kent, England.

Operation Deep Freeze – 50 Years

Olav H. Loken

In May 2005, I participated in the reunion of the Antarctic Deep Freeze Association in Biloxi, Mississippi, USA, to celebrate the 50th anniversary of Operation Deep Freeze, which provided logistic support for US research in Antarctica during the International Geophysical Year (IGY) 1957/58.

When President Eisenhower announced in March 1955 that the US would participate in the International Geophysical Year he charged the US Navy with providing logistic support for the Antarctic operations. The Navy established Operation Deep Freeze, and the ships of the first phase – Deep Freeze I – sailed from the US in the fall of 1955 for the Ross Sea area to establish a logistic base at McMurdo and the Little America V (LAV) station near the east end of the Ross Barrier. Crews spent the austral winter of 1956 at both sites. The following spring they established two inland stations; the South Pole and Byrd stations. The former was principally air-dropped by flights from McMurdo; the latter being supplied by tractor-train (sleds pulled by large Caterpillar tractors) from LAV. Deep Freeze II also established the US coastal stations: Ellsworth on the ice shelf in the Weddell Sea; Wilkes at about 115°E; and the joint US–New Zealand station at Cape Hallett, near Cape Adare. All seven stations were then ready for use by the scientists, most of whom arrived during the 1956/57 summer for the start of the IGY on 01 July 1957.

While Deep Freeze I and II unfolded, 11 other countries were busy marshalling their Antarctic expeditions, but only that of the Soviet Union was even close to the scale of the US effort. Twelve countries operated 36 over-wintering stations in Antarctica, on land and on the ice sheet/ice shelves during the IGY. This unprecedented scientific effort on the "Seventh Continent" was a key feature of the IGY.

Most of the 180 participants in our three-day reunion were Navy veterans of Deep Freeze I. The rest, and notably most of the scientists, were Deep Freeze II participants. The program included an excellent series of lectures. Jerry Marty, the NSF officer responsible for the current reconstruction of the South Pole station, gave a well-illustrated

overview of this very modern facility, and of the progress toward the official opening in January 2007. Phil Smith, best known in SCAR circles as the Chair of the recent SCAR Reorganisation Committee, gave a fascinating and thought-provoking overview of Antarctic science as he has seen it develop. He started in Antarctica as a young Army officer leading the advanced party that found a safe route for the first tractor train through the crevasse field between LAV and Byrd stations. He retired recently after serving as an adviser on polar matters to three US presidents. Capt. Fegley spoke about the US nuclear plant at McMurdo operated since the mid 1960s until it was dismantled after about a decade; and Dian Belanger, the historian charged with writing the history of the Deep Freeze Operation, gave a fascinating update on her project.

The schedule also left time to reminisce about old times and about all the changes that have occurred in the meantime.

My participation in Deep Freeze II came about by coincidence. In the fall of 1956, I was a crew member on a Norwegian freighter (my "year off" as a student). While in Baltimore, I had an unexpected call from a glaciologist in Washington DC, with whom I had worked on glaciers in Norway. He was going to Antarctica in three weeks, but one of his assistants had suddenly quit, and he needed a replacement. Was I interested? I jumped at the opportunity!

A hectic period of preparations followed. I had to be discharged from the ship, by breaking a 12 month contract, make a trip to the US consulate in Montréal for a visa to allow me to work in the US, and sign on as an employee of the Arctic Institute of North America, with Dr Walter A. Wood in New York. It paid my salary. I went through medical tests in Washington, DC, attended a briefing session and collected my cold-weather gear (mainly Army issue) in Rhode Island, etc. and was all ready for an early November sailing from Seattle. During Deep Freeze II, air travel was restricted so everyone at our station travelled by sea all the

INTERNATIONAL POLAR YEAR (IPY) 2007–08 NEWS

On 21 September, The Honourable Anne McLellan, Deputy Prime Minister, announced Canada's participation in International Polar Year 2007–08, the largest ever international research program in the polar regions. The Government of Canada will provide $150 million in new funding over six years to carry out an innovative, interdisciplinary program for International Polar Year along with our international partners.

International Polar Year will take place over a 24-month period and will include research activities in both the Arctic and Antarctic regions. Our hope is that the International Polar Year initiative will be the genesis of a new generation of polar scientists and experts from the North, said Minister McLellan.

In 2007–08 the international polar research community will celebrate the 125th anniversary of the first International Polar Year (IPY) and the 50th anniversary of the International Geophysical Year. The IPY and IGY were major initiatives that brought significant new insights into global processes and laid the foundation for decades of invaluable polar research. International Polar Year 2007–08 will offer Canadian scientists a chance to mount an intense, global campaign of coordinated polar observations and analysis, it will be bipolar in focus, multidisciplinary in scope, and truly international in terms of participation.

A call for funding IPY project proposals will be launched very soon, so check the Canadian IPY web page often. www.ipy-api.ca

way from Seattle, mostly on the USCGC *Northwind,* stopping in Honolulu and in Wellington, New Zealand[1].

When we left New Zealand, *Northwind* was part of a seven-ship convoy consisting of three icebreakers, three large cargo vessels (approx. 10,000 ton each), and a small oil tanker. A massive operation! First stop for the *Northwind* and one of the cargo vessels was Cape Hallett, where we off-loaded the equipment for the joint US–NZ station. The plan was to continue westward to our own base, but operational problems intervened and we were briefly diverted to McMurdo. The delay was annoying, but we were richly compensated.

The Ross Sea area was the focus of Antarctic exploration during the "Heroic Era" of Amundsen, Mawson, Shackleton, Scott, etc. in the early part of the 20th century. When Deep Freeze arrived, there had been no shore activity for about 50 years, as two World Wars had intervened. Nobody had been to the South Pole since Scott's visit in 1912, except for Admiral Byrd who flew over it in 1928[2]. Many of us took the opportunity to visit Scott's and Shackleton's old huts, Observation Hill and the future site of Scott Base, where Sir Edmund Hillary had a few tents and piles of equipment. We marvelled at how the old explorers had worked and survived with such "old fashioned" equipment under very adverse condition. We were impressed by the courage, determination and stamina they demonstrated in their day-to-day activities and by their scientific achievements. (How do the current groups of young Antarctic expeditioners regard what we did, as they arrive 50 years after we left?)

1 Today, scientists travelling to the Ross Sea area are likely to arrive by air from their home bases via New Zealand, where sniffer dogs check their luggage for narcotics, etc. In the mid 1950s narcotics and drugs were merely something that doctors used for treating patients.

2 The first aircraft ever to land at the South Pole touched down on 31 October 1956 during Deep Freeze II.

In all, with some operational delays it took more than 11 weeks to reach the planned location for our station; the Vincennes Bay area, about due south of Perth, Australia. An advantage of the long journey was that we got to know each other prior to being "locked in" for the winter.

On arrival at the end of January 1957, events unfolded quickly under the pressure of approaching winter. First, a campsite was selected on Clarke Peninsula, the "landward" side of which was covered by the Antarctic ice sheet with easy access to the interior; then members of the Navy Mobile Construction Battalion off-loaded equipment and supplies and constructed the prefab buildings of Wilkes Station. (There were more than 20 of them to accommodate the special needs of the sciences and safety concerns.) After 15 days, the station was formally dedicated. The support vessels left in mid February, leaving much of the inside construction, painting etc., to the 27-member over-wintering crew. Seventeen were Navy personnel who provided basic infrastructure such as power, heating and plumbing, food, vehicles, medical services, etc. The rest were civilian scientists studying a range of subjects: aurora, geomagnetism, ionospheric physics, glaciology, seismology, and bird biology. All were Americans except for me. Our first ablation/accumulation stakes at Wilkes were established along the "Sullivan Trail", named in honour of the noted US journalist who popularized the IGY (Sullivan, 1961), and the most famous participant in our first reconnaissance trip.

The presence of a Navy doctor was of great comfort, although he did not have to deal with any serious incidents. That was fortunate, because our station was one of the most isolated ones. We had no airstrip and it would be very difficult to penetrate the wide belt of heavy sea ice along the Southern Ocean coast in case of a serious mid-winter emergency[3].

For glaciological studies, we established a substation (S-2) with a small Jamesway building about 80 km inland at an altitude 1170 m a.s.l., where we excavated a 35 m deep

pit (2×2 m cross-section) for stratigraphic studies. From the bottom, we drilled a further 25 m and collected ice cores. We believed this was the deepest pit in Antarctica at the time. Today, scientists have collected ice cores from depths of about 3500 m at Vostok station. We did not know it at the time, but S-2 proved to be very close to the top of the Law Dome, where Australian glaciologists subsequently drilled to bedrock and completed several excellent studies. In comparison, our efforts in 1957 seem rather insignificant! Such is the progress of science and technology! Our seismologist, Dr Gill Dewart, has described his experiences as a Deep Freeze II participant in a very interesting and personal book (Dewart, 2003).

Until the ships with the relief crew returned after a year, communication with the outside world was entirely by radio, but connections were of varying quality as the IGY coincided with a period of maximum sunspot activity. Those periods are great for aurora watchers, but not for radio transmissions. There was no satellite link as the very first satellite, the Russian Sputnik, only went into orbit three months after the start of the IGY. However, we greatly appreciated the co-operation of US ham operators who frequently connected us with family and friends via telephone links.

In retrospect, it was remarkable that the international community could implement the comprehensive and well co-ordinated IGY program during the Cold War. This was strongly impressed on me when I received a package with news clippings from Norway just before sailing from Seattle. The headlines were huge, as the papers reported on the brutal Soviet crackdown on the uprising in Hungary. This was bigger news in Norway, which shared a boundary with the Soviet Union, than it was in the US. The news was bad, yet the IGY was implemented largely as planned! Dr L.M. Gould, Chair of the US National Committee for the IGY said: "It was in the coldest of all the continents that there was the first memorable thaw in the Cold War." That is a great IGY legacy! (Belanger, 2004).

There was also concern over the situation in the Middle East when President Nasser of Egypt nationalized the Suez Canal in 1956. The Anglo-French invasion of Egypt took place in the face of a Soviet Union veto. On my trip to the US I didn't know whether we would be able to transit the Suez Canal or have to sail around the Cape of Good Hope.

Canada did not participate in Antarctic research during the IGY. Prof. J. Tuzo Wilson, a geophysicist at the University of Toronto, as President of the International Union of Geodesy and Geophysics, was probably more involved with IGY issues than any other Canadian. He wrote a very interesting account of his worldwide travels during this time (Wilson, 1961).

Scientific co-operation in Antarctica led to the formation of the non-governmental Scientific Committee on Antarctic Research (SCAR) and to the signing of the intergovernmental Antarctic Treaty (AT). Both structures have been modified over the years, but continue to operate effectively today.

It is interesting to compare the two Polar regions since the IGY. In the South, international scientific co-operation initiated during the IGY continued and expanded, while in the North, the Cold War regime remained for another 30 years, until glasnost and the fall of the Berlin Wall. Until then it was

3 During the Biloxi reunion, we had a conference call with some of the current South Pole crew to exchange experiences of "life at 90°S". The most interesting part was hearing Dr Christian Otto (of Kingston, Ontario), the station physician, describe the range of medial services now available. A vast improvement over Deep Freeze II conditions, due to new station facilities, modern imaging technology and the ability to transmit images via satellite to specialists for analysis and advice. When Dr Otto returns to Canada he will bring valuable experience that could help improve health services at remote communities in northern Canada.

virtually impossible to work in a true circumpolar context. Within the respective countries the concept of "northern science" developed deep roots with national overtones.

Since IGY, global change has emerged as a major concern, integrated studies of the "Earth System" have been initiated, and the linkages between the two Polar regions have come to the fore. All this requires greater attention to Antarctic science and this will hopefully be a legacy of the International Polar Year 2007–09, planned in part to celebrate the "golden anniversary" of the IGY.

References

Belanger, D.O., 2004. The International Geophysical Year in Antarctica: uncommon collaborators, unprecedented results. *J. Gov. Inf.*, 30(4), 482–489.

Dewart, G. 2003. *Journey to the ice age.* Sun Valley, CA, Ruobei Tang Publishing Co., 333 pp.

Wilson, J.E.T., 1961. *IGY: the year of the new moons.* Toronto, Ont., University of Toronto Press, 345 pp.

Sullivan, W., 1961. *Assault on the unknown: the International Geophysical Year.* New York, etc., McGraw-Hill Book Co. Inc., 460 pp.

Dr Olav Loken (oloken@sympatico.ca) was Secretary of the Canadian Committee for Antarctic Research from its inception until October 2005. He is retired and lives in Ottawa.

McMurdo Dry Valleys, October–November 2004

Martin Sharp

As part of an ongoing Arctic–Antarctic Exchange program with Dr Sean Fitzsimons, University of Otago, I visited the McMurdo Dry Valleys in November/December 2004 under the auspices of Antarctica New Zealand. The focus of our research is the investigation of physical and biological processes (and their coupling) beneath cold-based glaciers. During the past season, we were able to visit Lower Wright, Clark, Upper Victoria and Suess Glaciers in order to investigate the interactions between cold-based glaciers and permanently ice-covered proglacial lakes. In this we were able to take advantage of two tunnels excavated by Dr Fitzsimons into the basal zones of Lower Wright and Upper Victoria glaciers in previous seasons, as well as excellent exposures in the terminal ice cliffs of Clark and Suess Glaciers. We also conducted detailed ground penetrating radar surveys of the contact region between Lower Wright Glacier and proglacial Lake Brownworth.

Our study is motivated by previous work carried out by Dr Fitzsimons and Belgian collaborators and by results emerging from the analyses of samples collected by Ph.D. student Joel Barker in 2003. Collectively, these show that significant thicknesses of basal ice may accrete onto the bottom of cold-based glaciers that advance into proglacial lakes, perhaps as a result of upward migration of pore waters contained in unfrozen lake-bottom sediments to a freezing front located beneath the glacier sole. These ice layers seem to host heterogeneously distributed, but significant, microbial populations, and are characterized by organic carbon and organic anion contents that are, locally, very high relative to glacier ice. Interestingly, the organic anion content includes significant levels of methanesulphonate, an oxidation product of dimethylsulphide (DMS). DMS itself is usually produced by the decomposition of dimethylsulphoniopropionate, which is derived from dying phytoplankton cells. We hypothesize that the advance of glaciers with basal ice at temperatures around −20°C into ice-covered proglacial lakes may establish a kind of hydrological pump by which lake

Lower Wright Glacier. Contact between white glacier ice and underlying blue ice believed to form by accretion of water derived from proglacial Lake Brownworth to the glacier sole.

water is transferred through lake floor sediments to replace water drawn up towards the freezing front at the glacier sole. The resulting water flow may transfer carbon from primary productivity within the lake along with nutrients and other ionic species into the subglacial environment and ultimately into the basal ice layer of the glacier. This may provide a mechanism whereby microbial populations can be sustained in an environment where ambient light levels are too low to permit *in situ* primary productivity. It may also be a means of introducing microbes to the subglacial environment. To test this hypothesis, we collected samples from three glaciers that terminate in proglacial lakes (Lower Wright, Upper Victoria and Suess), and one that terminates on land (Clark). We predict that the basal ice from Clark Glacier may differ substantially from that of the other three glaciers in terms of its microbial populations and anion chemistry because of the lack of a proglacial lake source of water and organic matter at this site. Our Antarctic ice samples will be analyzed in collaboration with Dr Julia Foght and the University of Alberta group of microbiologist.

During this visit I was also able to visit many parts of the McMurdo Sound/ Dry Valleys region to collect a suite of snow samples for analysis of their mercury content and speciation by Dr Vince St Louis, Biological Sciences, University of Alberta. This builds on previous work we have conducted in the Arctic which has revealed that an unexpectedly high proportion of the mercury in snow is in the form of monomethyl mercury, and that there is a strong relationship between the sea salt and monomethyl mercury content of the snow. We hope to determine whether the same holds true in coastal regions of Antarctica.

Scott's *Terra Nova* hut at Cape Evans, showing the build-up of wind-drifted snow against the back wall of the hut. Recent thickening of the sea ice in McMurdo Sound resulting from partial blocking of the sound by Iceberg B15 may have increased the local fetch and resulted in an increase in wind-drift accumulation around the hut.

In addition to the scientific elements of the visit, we had the opportunity to visit Scott's *Terra Nova* hut at Cape Evans to evaluate problems arising from the build-up of snow at the back of the hut. These may be linked to the development of an unusually thick multi-year sea-ice cover offshore, which is due to the partial blocking of the entrance to McMurdo Sound by Iceberg B15a. We also had the privilege of a field visit from Sir Edmund Hillary, who was in the region to commemorate the 25th anniversary of the Erebus air disaster, to open a new field store at Scott Base, and to participate in a television documentary on the International Polar Year and his role in the International Geophysical Year.

I would like to thank CCAR and Polar Continental Shelf Project for supporting the Arctic–Antarctic Exchange Program, Antarctica New Zealand for outstanding logistic support, and NSERC and Sean Fitzsimons for financial support. Sean Fitzsimons, Shelley MacDonnell, Laurel George, David McDowall and Joffe Jenkins were exceptional field companions.

Dr Martin Sharp is Professor of Geography in the Department Earth and Atmospheric Sciences, University of Alberta and a member of the CCAR (martin.sharp@ualberta.ca).

Report on the IX SCAR International Biology Symposium, held at Curitiba, Brazil, 25–29 July 2005

Kathy Conlan

There were 246 oral and poster presentations at this meeting. About 350 Antarctic biologists from 72 countries were present, with one representative from Canada (K. Conlan). Participants and other meeting details are given at www.pucpr.br/template.php?codredir=647&&codigo=1. There were two workshops and several discussion meetings.

EVOLANTA and RiSCC: these research programs were closed and incorporated into EBA (see below).

EBA (Evolution and Biodiversity in the Antarctic): a new umbrella program of the LSSSG will run from 2006 to 2011. Members of the Implementation Plan Steering Committee met to review progress and the next steps. Interested Canadians should check www.nioo.knaw.nl/projects/scarlsssg/eba/ and fill in the questionnaire.

Benthic Metadata: benthic ecologists met to discuss compiling Antarctic benthic data for meta-analyses.

CAML: Census of Antarctic Marine Life. This will be a five year, multinational effort, to collect and identify Antarctic marine life and is an IPY project of EBA. Canada has been invited to participate. See www.caml.aq for details.

IAI (International Antarctic Institute): a consortium of universities and institutions (www.iai.utas.edu.au) has been formed to maximize university-level education about the Antarctic with a view to increasing the number of Antarctic grad students. Although Canadian universities lack programs that focus on the Antarctic, this website should be useful either to CARN members wanting to become associates or as a contact point for students wishing to go to the Antarctic.

While in Brazil, I performed my secretarial duties for LSSSG. The XXIX SCAR and 2nd SCAR Open Science Conference, where I will be secretary for the LSSSG meeting, will be held in Hobart, Tasmania, 9–14 July 2006. Canadian scientists should consider presenting papers at this meeting. Information and registration details are available at www.scar2006.org: **abstracts deadline is 31 December.**

Dr Kathy Conlan is a research scientist with the Canadian Museum of Nature and Canadian representative to the Life Sciences Scientific Standing Group (LSSSG) of the Scientific Committee on Antarctic Research (kconlan@mus-nature.ca)

Nimrod Hut during the British Antarctic Expedition 1907– 09.
Photo: Canterbury Museum Collection, Ref 1981.110.3.

Ross Sea Heritage Restoration Project

Gordon Macdonald

During 2004–05, Gordon Macdonald took part in a four week event staged from Antarctic New Zealand's Scott Base. K440 was part of the Ross Sea Heritage Restoration Project: an effort to conserve four historic buildings constructed during the Heroic Age of Exploration. The project is led by the Antarctic Heritage Trust (www.heritage-antarctica.org), a New Zealand based registered charity created in 1987 specifically to conserve and repair these historic buildings.

An international team of experts has been assembled to perform the work, starting with repairs to Sir Ernest Shackleton's *Nimrod* Hut, located at Cape Royds. Gordon, the only Canadian member of the team, will be heading south with the AHT in January 2006.

Gordon Macdonald is a Vancouver Island carpenter specializing in the conservation and repair of timber buildings (gordonmacdonald@shaw.ca).

Message from the CCAR Chair

Wayne Pollard

Two changes have recently occurred in the Canadian Committee for Antarctic Research. First, Dr Peter Suedfeld (Psychology Department, UBC) has completed his second term on CCAR and is being replaced by Dr Dafydd (Dave) Williams (CSA, Astronaut Program). Peter has been a driving force behind the development of a Canadian Antarctic Research Program. Dr Suedfeld's research is concerned with how human beings adapt to and cope with novelty, challenge, stress, and danger. His polar research has dealt principally with leadership styles in extreme work environments and personality correlates of people who respond well to, and even crave, such conditions. Thanks Peter.

Dave Williams has a Doctorate of Medicine and a Master of Surgery from the Faculty of Medicine, McGill University. He joined the Canadian Space Agency Astronaut Program in 1993 and became the manager of the Missions and Space Medicine Group. In January 1995, Dave was selected to join the international class of NASA mission specialist astronaut candidates. In April 1998, he participated in STS-90 as Mission Specialist 3 aboard Space Shuttle Columbia. From July 1998 until September 2002, Dave held the position of Director of the Space and Life Sciences Directorate at the Johnson Space Center in Houston, Texas. In October 2001, he became an aquanaut through his participation in the joint NASA–NOAA (National Oceanic and Atmospheric Administration) NEEMO1 mission, a training exercise held in Aquarius, the world's only underwater research laboratory. Dr Williams is currently training to participate in his second space flight, Mission STS-118/13A.1. Welcome aboard Dave.

The second change is the retirement of Dr Olav Loken as CCAR secretary. Olav has been the glue that has held CCAR together since it was created in 1998. After obtaining his Ph.D. from McGill University, Olav spent most of his career working for the Government of Canada on issues related to environmental research and management in Northern Canada. However, Olav has played a pivotal role in all CCAR activities and work toward a Canadian Antarctic Research Program. As IPY draws closer it is worth noting that Olav spent the first winter of the International Geophysical Year (1957) at the US Wilkes Station as an assistant glaciologist. I owe Olav a personal debt of thanks for his support during my term as CCAR chair. Replacing Olav as secretary is Simon Ommanney. I am pleased to welcome Simon as CCAR secretary and look forward to his contribution over the coming years. You will remember that Simon was introduced in *CARN 19* as the newsletter editor. After obtaining his Masters from McGill University, Simon worked as a glaciologist with Environment Canada's National Hydrology Research Institute, and was the first Chief of its Scientific Information Division. From 1993 to 2003 he was Secretary General of the International Glaciological Society, based in Cambridge, UK, for services to which he was awarded the Richardson Medal. On his retirement and return to Canada, he was appointed a Senior Research Associate of Cambridge University's Scott Polar Research Institute. He now lives in Toronto.

In closing I need to acknowledge both NSERC and the Government of Canada for their allocation of funds to support Canadian activities in the International Polar Year. However, I need to remind both that IPY is international and includes both poles. Even though Canada's polar strategic priorities focus on Arctic issues, like climate change, northern communities and northern people, these funds also need to support Canadian Antarctic research activities that meet IPY requirements.

News in Brief

Reinhard Pienitz (Laval), Marianne S.V. Douglas (Toronto) and **John P. Smol (Queen's)** are editors of *Long-term Environmental Change in Arctic and Antarctic Lakes,* Vol. 8 in Springer's latest Developments in Paleoenviron-mental Research (ISBN: 1-4020-2125-9). The book explores the diverse ways in which paleolimnology is used to address the pressing and emerging environmental issues of high-latitude regions, and provides a synthesis of available techniques and overviews of recent work.■

Pierre-Simon Ross (M.Sc., UQAM) obtained his Ph.D. in Geology from the University of Otago, New Zealand with a thesis on *Volcanology of the Mawson Formation at Coombs and Allan Hills, South Victoria Land, Antarctica.* He has returned to UQAM as a research scientist.■

ESA's ice mission, CryoSat, designed to calculate rates of change in polar ice thickness and mass, was lost on 8 October 2005, due to a malfunction of the Russian launch vehicle.■

A number of Canadians will be in the Antarctic region during the 2005/06 season. More than 50 students will be visiting through **Geoff Green** and the **Students on Ice** program. Included amongst the lecturers will be **Fritz Koerner, Bill Lishman** and possibly **Fred Roots. Hugh French (Ottawa)** and **Bill Barr** (AINA) will be joining the M/S *Explorer* as lecturers for the GAP **Adventures (Toronto)** cruise. **Steven Siciliano (Saskatchewan)** will be with the Australians at Casey. **Stéphane Mazzotti** (GSC) will be at Signy. **Gordon Ozinski** (CSA) will be investigating meteorites in the Dawson Range.

Rachael Morgan-Kiss (Postdoc in Microbiology, University of Illinois at Urbana-Champaign) will be with John Priscu (Montana State University) estimating phytoplankton numbers in the Dry Valley lakes by detecting differential fluorescence emission of the major spectral algal groups. *In situ* measurements will be used for later analysis of other independent biomarkers of phytoplankton diversity. A full report of her work will appear soon in the *CARN Newsletter.*

Émilien Pelletier (ISMER) will join Daniel Delille (Université Pierre et Marie Curie) at Port-aux-Français (Kerguelen Archipelago) for soil bioattenuation experiments. He will install a Microtox® analyser in the biological laboratory and provide instructions on running solid phase tests on contaminated soils and sediments over austral winter 2006. A summary of his cooperation with France and Belgium and his research activities over the last five years in the Antarctic will be published in the next *CARN Newsletter.*

Robin Phillips (Lethbridge) will be installing an Infrared Radiometer for Millimetre Astronomy (IRMA) instrument in the Automated Astrophysical Site Testing International Observatory (AASTINO) on Dome C.

Barth Netterfield (Toronto) plans to launch a balloon-borne telescope in Antarctica in December, under the Balloon-Borne Large Aperture Sub-Millimetre Telescope (BLAST) project.■

Wayne Hocking (Western Ontario) was at Rothera in February 2005 working with Patrick Espy (British Antarctic Survey) and Nick Mitchell (Bath University) on the installation of a meteor radar. The system is designed to measure upper level (80−100 km altitude) winds and wave activity. Typically 5000−10,000 meteors per day are detected. It is described at http://mardoc-inc.com/radar_skiymet.html.■

Dr Christian Otto, an emergency physician who resides in Kingston, Ontario, has just completed a one-year tour as station physician at South Pole station. A report on his experiences will appear in the next issue of the *CARN Newsletter.*■

Eric Woehler, head of the SCAR Bird Biology Subcommittee, informed **Kathy Conlan (Canadian Museum of Nature)**, following a review of the population status of about 40 bird species in Antarctica, that the populations of the southern giant petrel have plummeted and an endangered status will likely be applied which will severely curtail human (scientific as well as tourist) access to nesting sites.■

The Sedimentary Source-to-Sink-Fluxes in Cold Environments (SEDIFLUX) Network of the European Science Foundation held its Second Workshop on *Shifting lands: new insights into periglacial geomorphology* in Clermont-Ferrand, France, 20–22 January 2005. Planned presentations included the following: **Kevin Hall (UNBC), Joselito Arocena (UNBC)** *Stone runs in the Falkland Islands: periglacial or tropical?;* **Kevin Hall (UNBC)** *Perceptions of rock weathering: some thoughts on attributes of scale;* Marie-Françoise André, **Hugh French (Ottawa)** *Periglacial geomorphology as a branch of geocryology;* **Hugues Lantuit (McGill), W.H. Pollard (McGill)** *The relation between retrogressive thaw slumps polycyclic pattern and shoreline evolution on Herschel Island, Yukon Territory.*■

CCAR/CCRA Members and Advisers

Wayne Pollard (Chair)
Department of Geography
McGill University
805 Sherbrooke Street West
Montréal, Quebec H3A 2K6
Tel: (514) 398-4454
Fax: (514) 398-7437
pollard@felix.geog.mcgill.ca

Kathy Conlan
Canadian Museum of Nature
P.O. Box 3443, Station D
Ottawa, Ontario K1P 6P4
Tel: (613) 364-4063
Fax: (613) 364-4027
kconlan@mus-nature.ca

Serge Demers
Institut des sciences de la mer de Rimouski (ISMER)
310, allée des Ursulines, C.P. 3300
Rimouski, Québec G5L 3A1
Tel: (418) 723-1986 x 1651
Fax: (418) 724-1842
serge_demers@uqar.qc.ca

Marianne Douglas
Department of Geology
University of Toronto
22 Russell Street
Toronto, Ontario M5S 3B1
Tel: (416) 978-3709
Fax: (416) 978-3938
msvd@geology.utoronto.ca

Martin Sharp
Earth and Atmospheric Sciences
University of Alberta
1-26 Earth Sciences Building
Edmonton, Alberta T6G 2E3
Tel: (780) 492-4156
Fax: (780) 492-2030
martin.sharp@ualberta.ca

Dave Williams
C/O Astronaut Office
Mail Code CB
Johnson Space Center
2101 NASA Parkway
Houston, Texas
TX 77058, U.S.A.
Tel: (281) 244-8883

Fred Roots (Antarctic Adviser CPC)
Environment Canada
351 St. Joseph Blvd, 1st Floor
Ottawa, Ontario K1A 0H3
Tel: (819) 997-2393
Fax: (819) 997-5813
fred.roots@ec.gc.ca

Warwick F. Vincent (Past Chair)
Département de biologie
Université Laval
warwick.vincent@bio.ulaval.ca

Simon Ommanney (CCAR Secretary)
27 Glen Davis Crescent
Toronto, Ontario M4E 1X6
Tel: (416) 686-6307
simon.ommanney@sympatico.ca

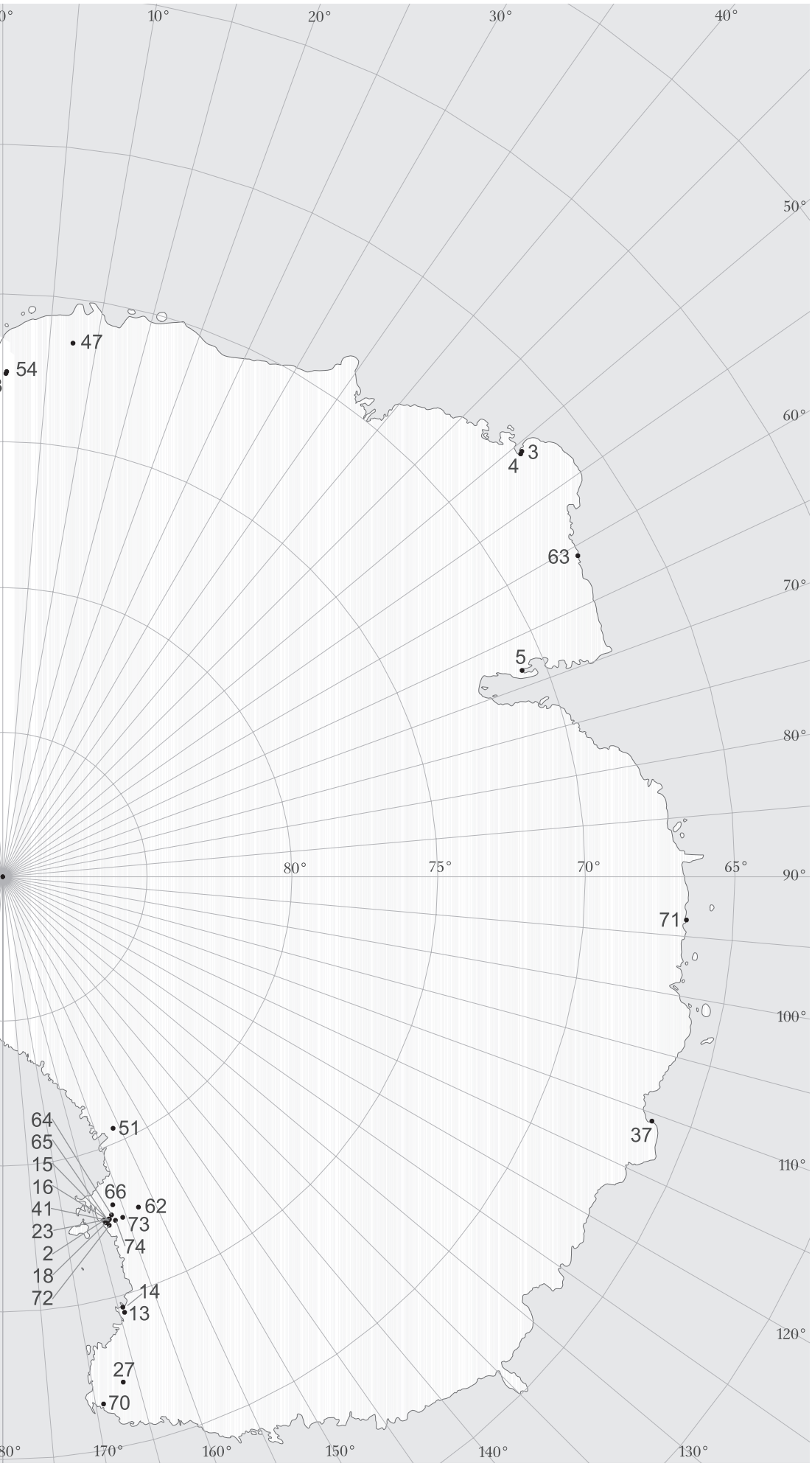
CARN Newsletter

Editor: C. Simon L. Ommanney
Please send contributions and correspondence to:
C. Simon L. Ommanney
Editor, CARN Newsletter
Address at left.

Canadian Polar Commission
Suite 1710, 360 Albert Street
Ottawa, Ontario K1R 7X7
Tel.: (613) 943-8605
Fax: (613) 943-8607
mail@polarcom.gc.ca
www.polarcom.gc.ca/ccarhome.htm

CANADIAN ANTARCTIC RESEARCH NETWORK

Canadians in Antarctic Place Names
Map: Peter Pulsifer



Les Canadiens et les noms de l'Antarctique
Carte : Peter Pulsifer