

THE 945th MEETING OF THE BRODIE CLUB

MINUTES

The 945th meeting of the Brodie Club was held on Jan. 18, 2000 in the Ramsay Wright Building of the University of Toronto.

Chairman: Alexandra Eadie
Recording Secretary: Oliver Bertin
Attendance: 19 members and three guests
Jean Iron and Ron Pittaway, guests of Bruce Falls
Hugh Henry, guest of Ken Abraham

ANNOUNCEMENTS:

- Harry Lumsden announced that the Lake Ontario Region of the FON is holding a workshop meeting in Oshawa on April 8. The workshops will cover the marketing of clubs, management of volunteers and fund-raising;

- Lumsden noted that the Canada Trust Community Fund is supporting community awareness programs again this year. They offered Lumsden \$5,000 in 1998. This year, the grants appear to be limited to \$500;

- Claire Muller said there will be a meeting of the Ontario Municipal Board in May to discuss development of the Oak Ridges Moraine;

- Jim Bendell recommended "Earth, Water, Fire: An ecological profile of Lanark County," a 72-page history of Lanark County by Dr. Paul Keddy of the Dept. of Biology of Ottawa University. Bendell is selling copies for \$10 on behalf of the Mississippi Valley Field Naturalists. The book covers the geology, trees and forests of the county, including the main geological feature, the Frontenac Axis;

- Falls and several other members recommended "The Song of the Dodo: Island biogeography in an age of extinctions" by David Quammen, a \$23 book on the mysteries of evolution and extinctions, published by Touchstone Books. It is a thick book, suitable for laymen and a week-long sojourn at the cottage;

- Abraham said officials at MNR's Maple station found 250 copies of Lumsden's 1977 paper on the nesting habits of Canada Geese in the Hudson Bay Lowlands while cleaning out a storage area. He offered a copy to all members who attend the February meeting. Lumsden agreed to autograph them.

SPEAKER:

As a member, Abraham needs no introduction. A research scientist in wetlands ecology with the Ontario Ministry of Natural Resources in Peterborough, he spoke on:

The Natural History of Southwest Baffin:
An Expedition to the Great Plains of Baffin Island

Abraham went on a three-week expedition to the Great Plains of Koukdjuak on Baffin Island, an area which is one of the prime nesting areas for the Lesser Snow Goose.

The purpose of the trip was to study the impact of the breeding goose population on the local vegetation. The project was particularly interesting because Abraham had previously studied the severe cropping of grasses and other vegetation in the Hudson Bay Lowlands, a key nesting and staging area for migrating geese that is 1,300 km to the south. The Hudson Bay Lowlands have been studied many times, but this was the first major study of the goose habitat on Baffin Island.

Abraham arrived at the Great Plains of Koukdjuak on August 1 last summer and set up in an abandoned fishing camp just north of the Arctic Circle, where the Koukdjuak River drains the giant Nettilling Lake. He left for home on Aug. 16.

The area studied was unique. The Great Plains of Koukdjuak is an area 200 nautical miles long by 40 miles wide on the shores of the Foxe Basin on the western side of Baffin Island. It is extremely flat, rising to an elevation of perhaps five meters between the coast and the edge of the Precambrian Shield, 40 miles inland.

The Putnam Highlands are a dramatic feature, 100 feet high with talus slopes. The top was flat, dry and bereft of vegetation. Abraham found huge fossils at every step, often large marine bivalves the size of a dinner plate.

Formerly submerged, the area was still extremely damp in August. A salt-water marsh one kilometer wide circles the coast, and the rest of the area is typically marine clay, covered with perhaps 10 inches of peat. The surface is mostly damp or wet moss-covered marsh, pockmarked by circular potholes, lakes and rivulets.

Even in the dry areas, the water table is very high. Many of the lakes form perfect circles, a feature that is often found in permafrost areas. Nettilling Lake, however, is a large body of fresh water in the centre of the Great Plains, about 75 km long and wide.

The Great Plains is a perfect nesting ground for geese. There were 1.6 million Lesser Snow Geese in the area when Abraham did his survey, 100,000 to 200,000 of a small variety of Canada Geese, about 10,000 Ross Geese in two colour phases, and 50,000 to 60,000 Brant Geese. The total population was close to two million breeding geese, with a high of perhaps three million in a normal year after the nestlings hatch.

It was late spring when he arrived and the lake was still covered in ice. The ice broke within 15 minutes of his arrival with the tinkling sound of breaking glass. The level of the water rose shortly thereafter and threatened to engulf the fishing cabin where he had camped. This cabin was originally a base for the Arctic Char fishery on Nettilling Lake. The fishery proved uneconomic and was abandoned.

The weather was unusually cool, even by the standards of Baffin Island. The spring had been very cool and wet, and the temperature dropped below freezing every night that he was there.

Abraham used a helicopter for most of the study period. He dropped into 75 locations for about one hour each to inventory the soil and plant species and to measure the impact of the goose population. He also did plant transects, conducted a population count and banded about 2,000 geese with neck collars.

The population was unusually low that year because of the late spring and the unusually cool weather. Few geese were inclined to breed, and there was a low success rate among those that tried. Because of the relatively low bird numbers, the vegetation was unusually lush, with more flowers, denser stands of grass and less damage from cropping than local inhabitants were used to.

Of the 75 sites that were visited, about 15 were coastal salt marsh and the rest varied from wet marsh to dry soil, sometimes with a layer of limestone chips. There were occasional outcrops of Precambrian rock. Soil cores showed mosses, grasses and sedges covering a thick layer of peat that extended down to the permafrost. Sedges were about 40 cm high in patches of standing water, and flowering plants were common.

The area has been described as a "wet bog meadow" or "blue goose prairie." When the ice melts in the spring, it forms pools of water that are sometimes five feet deep, often with mosses or sedges around the edges. In the drier areas, the frost causes the mud to well up, leaving mud boils on the surface of the ground. Sometimes the mud rises into a hillock and then sinks in the middle, leaving a round puddle of water, ringed by mud.

Abraham found interesting geological formations in the Koukdjuak River, a wide and shallow river dotted with small islands. In many cases, these islands were shaped like a crescent with the curve facing upriver. Abraham suspected islands were knocked into this shape by sheets of ice roaring down the river each spring.

The summer was so late in the area that year that breeding was a failure. It was very difficult to find goslings, except in the extreme south end of the area. The geese apparently did not have time to build a nest, let alone lay and hatch their eggs. It was, Abraham noted, a year off for the habitat. That accounted for the lush grasses and abundant flowers.

Abraham wasn't sure what factors trigger breeding behaviour in geese, but he believes egg-laying is related to the water melt, depth of the ground cover and even the colour of the grass. There is clearly a small margin of error when breeding this far north, and a few days of cold weather can ruin mating for a season.

Nevertheless, adult geese were everywhere in great numbers. Abraham found the geese had caused light to moderate damage virtually everywhere in the study area. In some places, the geese had pulled up sedges by their roots and cropped the grasses so severely the area looked like a golf course. There was particularly heavy damage to the vegetation around the edges of the lakes, sometimes leaving bare mud.

Near the coast, so-called Goose Grass was very common, especially around tidal rivulets. This species used to be common in the Hudson Bay Lowlands until the 1970s, but has since disappeared, probably because of over-cropping by the geese.

Apart from geese, the flora and fauna were extremely limited in both numbers and variety when compared with southern Ontario. There were lots of Barren Ground Caribou around the camp, and some would come very close to investigate. The breeding season was starting and the larger bucks were starting to build their harems.

Abraham spied a white wolf from his helicopter. When he flew closer, the wolf ran back to a caribou that it had just slaughtered and prepared to defend his kill.

The bird species included King Eiders, Old Squaws and Pacific Loons, a species that used to be called Arctic Loon. Many ducks were breeding, particularly on the edge of turbid lakes. Abraham wasn't sure whether the ducks caused this turbidity or were attracted to it. There were about 35 species of birds, including Snow Buntings, Lapland Longspurs, Ravens, Semipalmated Plovers, Golden Plovers, gulls and Arctic Terns. The shorebirds - plovers and sandpipers - appeared to be breeding, despite the cool weather.

The vegetation included a kind of wild grass that floated on the surface of the streams. There was also an abundance of flowers, including Arctic Poppy, several kinds of Saxifrage, Primula and tiny Rhododendrons. Saxifrage and Wintergreen seemed able to take root in the clay beneath beds of shattered limestone, while Bog Saxifrage was able to grow in beds of fine sand, typical of coastal beaches. He also saw Purple Saxifrage and Lousewort in the Putnam Highlands.

QUESTIONS:

- Most of the area is reasonably wet for most of the year, as indicated by the prevalence of moss in most areas. The soil probably dries out by the end of August.

- Grazing pressure is much less severe than in the Hudson Bay Lowlands, where the geese have stripped much of the soil to bare mud. There is less damage on Baffin Island, partly because the goose population is much lower.

- The soil was bare in some of the salt-water marshes, particularly on the banks of rivulets. Fresh-water areas were not damaged as severely as the salt-water areas.

- It was clear that the damage was less severe than usual because of the low breeding rate that year. Local inhabitants said it was the first year they had seen flowers, and grasses with seedheads.

- Judging by the conditions last summer, Baffin Island would be able to support a higher population of geese. That is not true of the Hudson Bay Lowlands where grass is a limiting factor.

- The Great Plains appear to be at the northern extremity of the range of the Lesser Snow Geese. For some reason, they appear to fly there just in time to nest, breed and go south. They lose their chance to breed if the season is just a few days later than usual.

- Some geese breed in the Hudson Bay Lowlands. Others stop in the Lowlands for a relatively long time to replenish their food reserves and then head another 1,500 km north to breed on Baffin Island. This creates an extra load on the Lowlands, and correspondingly less on Baffin.

- Abraham has noticed many changes in the past 15 years in the Hudson Bay Lowlands. The pressure on the vegetation there is much greater than it was in the mid-1980s.

- The number of breeding geese on Baffin Island has quadrupled since 1973, when there were only 400,000 birds.

- It was usually too cold and windy on Baffin Island for mosquitoes to be a nuisance. But these critters came out on warm, windless days.

- Geese have many predators on Baffin Island. There are foxes, gulls and ravens, but any predator would need a year-round supply of food in order to survive. Geese would not fill the bill because of their short stay on the island.

- The goose population on Baffin Island will eventually be limited by the supply of grass, as it already is in the Hudson Bay Lowlands. But Abraham said it will be many years before grass becomes a problem on Baffin Island.

The speaker was thanked by Lumsden.

NOTES & OBSERVATIONS:

- Bill Carrick attended a joint meeting of the Whooping Crane Working Group (a quasi-government group) and the Whooping Crane Conservation Association (a private association) in Albuquerque, N.M. in early January.

He found three Whooping Cranes wintering there. They were part of the Rocky Mountain flock, which migrates from Idaho to New Mexico.

One group of crane conservationists has long advocated removing one egg from nests and putting them into the nest of a Sandhill Crane for incubation and raising. They deem one egg to be surplus because the first bird to hatch often grabs most of the food, becomes bigger and stronger, and pecks the younger bird to death. Of 23 nests that were studied, only one pair of adults successfully raised two young birds.

The egg removal method was successfully tried on birds in Wood Buffalo National Park, which had been reduced to only 14 birds by 1941. It became the basis for the Rocky Mountain flock, which now has 180 birds.

Another conservation group has established a non-migrating flock of 64 free-flying Whooping Cranes in Florida. There were two attempted nestings this year, but one was flooded and the other was destroyed by predators.

- Lumsden reported 25 Trumpeter Swans and three cygnets in the Metro Toronto Zoo. There is one Trumpeter and two Mute Swans in Pickering, but the largest flock of swans appears to be in Oshawa.

- Jock McAndrews saw a Great Horned Owl nesting in the Humber Marshes.

- McAndrews noted publication of a paper in American Scientist (Nov/Dec, 1999), that described a freshwater lake the size of Lake Ontario four kilometers beneath the Antarctic ice cap. Named Lake Vostok, this body of water is 230 km long, 50 km wide and 500 meters deep. It is located 1,500 km inland, in the Russian sector.

The lake has apparently been sealed for more than one million years and perhaps for as long as 40 million years. It may contain ancient life forms no longer found above ground, but whatever lives there would presumably have to withstand extremes of cold and pressure, with few nutrients and no light. Antarctic scientists are keen to sample the waters of the lake, but they lack the technology needed to test the waters without spreading possibly dangerous micro-organisms into the atmosphere or contaminating the lake with drilling fluids.

Russian scientists hosted an international project in 1998 which probed the ice cap in the area. They drilled down 3,623 meters, but stopped 120 meters short of the lake to avoid contaminating it. The drill core contained bacteria, fungi and algae up to 200,000 years old.

McAndrews found the subglacial lake particularly interesting because it could help to explain the formation of the Oak Ridges Moraine.

- Fred Bodsworth said there are as many as 70 lakes under the Antarctic ice cap, of all sizes. They appear to be heated by geothermal action.

- Bendell spied a Rough-legged Hawk near his home in the Ottawa Valley. The sighting was very clear and very exciting.

- Muller was intrigued by predation on Rattlesnake Plantains in Temagami. An unknown animal has been progressively eating the plants, from the flower down the stem.

- Eadie noted that a family of coyotes lives in High Park, on the edge of downtown Toronto. The city public health department held a meeting in mid-January to warn local residents not to feed the coyotes and to keep small pets on a leash. The coyotes have apparently not bothered humans.

The meeting adjourned at 10:03 pm.

THE NEXT MEETING:

The next meeting will be held on Feb. 15 at 8:00 pm in Room 432 of the Ramsay Wright Zoological Laboratories at the University of Toronto when recently retired moose parasitologist Ed Addison will speak on "Habitat Corridors: Beneficial or Detrimental?"

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Birdwatcher's flight of fancy leaves him without a home

BY MARINA JIMÉNEZ

A birdwatcher who says he accidentally crossed into the U.S. on his bicycle while pursuing a flock of sandhill cranes across the sky is now a man without a country.

Canada has refused to re-admit the 46-year-old Somali refugee, and the U.S. doesn't want him either.

Hussen Farah Mohammed was released from jail this week in

Bloomington, Minn., after spending 16 months in prison for illegally entering the U.S. on his bicycle. He emerged from prison Wednesday clutching his binoculars and wearing the same T-shirt he had on the day of his ill-fated bike ride in September, 1998.

"I was digging a well and I saw sand cranes coming across the sky so I chased them. It was a beautiful vision, but it wasn't worth it," he said in an interview.

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