THE 938th MEETING OF THE BRODIE CLUB

The 938th meeting of the Brodie Club was held on Tuesday, March 16, 1999 in the Ramsay Wright Building of the University of Toronto.

Chairman: Paul Aird
Recording Secretary: Hugh Currie
Attendance: 19 members and four guests
Mary Tasker, guest of Ron Tasker
Sandra Eadie, guest of Oliver Bertin
Henri Selles and Joyce Peterson, guests of the Mullers

ANNOUNCEMENTS:

— Jock McAndrews announced that a book on avian archeology in Ontario is about to be published under the editorship of Michael Kirby. "Birds from the Ground — The Record of Archaeology in Ontario" was written by Douglas Sadler and Howard Savage.

Much of the work was done by recently deceased Brodie Club secretary Howard Savage, who hosted the Club in his anthropology labs for 15 years. Upon his death in 1997, the manuscripts were turned over to Sadler who completed the book.

The cost of publishing 200 copies will be $6,000, so the price has been set at $35. Subscriptions for autographed copies are being taken for either $50 or $100.

Bill Carrick moved that the Club take a $100 subscription in the name of the Brodie Club. Seconded Charlie Lennox — Carried.

— Norm Martin turned a videotape on the Oak Ridges moraine over to Carrick.

— It was noted that biologist Robert Muir died on March 8, 1999.

— Claire Muller described a large growth on a maple tree that is visible to subway passengers just south of the Eglinton station when the leaves are off the trees.

— Ken Abraham advised that the Humane Society and the Animal Defence League are suing the federal governments of Canada and the U.S. over the special extended-season Snow Goose hunts in eastern North America. An immediate injunction stopping the hunts was requested but was not granted.

— Aird passed around a newly reprinted edition of his book of fables, "Loon Laughter".

— Mary Tasker has been nominated for membership in the Brodie Club by Carrick and Ann Falls of the membership committee. She has attended many Brodie Club meetings with her husband Ron and takes a keen interest in the club. Ron Tasker has written the following account of her interests.

"Mary is by education an occupational therapist who taught art to junior school at Toronto's Branksome Hall for many years. She now works as an artist. Her interest in natural history has been a general appreciation of the esthetics of our natural environment which she captures in her artwork. We have exploited this interest together in many parts of the world and have in particular been interested in bird life.

At home, Mary is a life member of the Long Point Bird Observatory and has in addition to our annual Birdathon been very extensively involved in behind-the-scenes work in fund-raising and other supportive activities relative to LPBO (now Bird Studies Canada). She has also taken a major role in the management of our 2,000 acres of wilderness on Manitoulin Island and two small areas of forest in the Oak Ridges moraine. Most significantly, she has imbued our four children with a similar interest though each of them manifests it in a different way.

Moira does marathons and has participated in the Nanisivik Marathon for years at the north end of Baffin Island. James' interest is in birding and orienteering. Ron is an inveterate wilderness area trekker, cross-country skier and canoer and Alison is a ski instructor who has worked at Banff, Panorama and Osler Bluff."

SPEAKER:

Bruce Falls introduced Dr. Harold Harvey, who spoke on the topic "Climate Change and Fish". Harvey has been a colleague of Falls for 35 years at the Department of Zoology, University of Toronto. He earned his PhD at UBC in the field of environmental physiology, and has worked with freshwater fish and acid rain since then.

Harvey told us how various climatic factors affected marine life and especially commercial fish, sometimes with respect to certain species only.

Before the Isthmus of Panama existed, the Atlantic flowed into the Pacific Ocean. Since that time, 600,000 years ago, there have been six or seven ice ages each lasting 8-12,000 years. They begin and end quickly. In any given year when the polar ice caps increase, the albedo (the reflectivity of the earth) can increase by as much as two per cent, decreasing the heat absorption of the sun, causing global cooling for that year.

There is a 100,000-year cycle of the earth's ellipse in relation to the sun, and there is a 40,000-year cycle in which the earth's tilt to the sun ranges from 21.4 to 24.4 degrees. The earth has a wobble (precession) with a cycle of 21,000 years which may aggravate or ameliorate the tilt effect.

When all these factors coincide, the sunlight may be reduced by 20 per cent. The situation builds on itself because the more snow on the ground, the greater the reflectivity, leading to less heat absorption and cooler weather.

There is evidence of ice-age periodicity from the rock strata in the Atlantic between Labrador and Portugal. They show six layers, indicating the ice cap covered the North Atlantic down to these latitudes.

Alaska salmon have been doing extremely well since 1976, more than overcoming the decline in the BC fishery, to the detriment of Canadian fishermen. Often when a sudden fish decline occurs, governments are slow to react due to the pressure placed on politicians by the newly unemployed.

If water temperature increases, the average salmon size is smaller though the total mass remains constant.

A five-year cycle has been observed in pilchards (sardines) from 1946 to 1998. They are taken off San Diego in quantities of 100-million tons a year for margarine, animal feed etc. In bad years, the older ones migrate to Alaska, and only three-year-old fish are caught, At such times, fishermen complain that they are getting only runts.

The now-collapsed king crab fishery appears to have a cycle opposite to that of pollack, which do best in cool years. They need wind coming from offshore to thrive.

Hake and herring are on opposite cycles which seem related to the precipitation, wind direction and wind velocity. Fishermen have observed a 45-year cycle off China which correlates to the precipitation cycle.

The fisheries are strongly suspected of causing the decline in the fish population. Obviously, if there are fewer adults, there will be fewer young fish. The Atlantic cod may never return to its former numbers, but may reach a stable population size determined by the predators that are present.

The present global warming trend will result in more storms, leading to more wind and precipitation. The storms will have more effect on the fish population than the warming off the oceans.

QUESTIONS:

— Is the total fish biomass stable? No, not even in the Great Lakes. It is true that certain factors help some species but act to the detriment of others.

— Do Atlantic seals affect the cod population? We do not know. The seal-fish interactions are too complex to be understood, but we do know that seals eat a wide variety of fish and many are non-commercial species.

— Cormorants are frequently purged by angry anglers, but stomach analyses show that 95 per cent of their diet is non-game fish, such as young suckers. Cormorants could be helping anglers by keeping down those fish species that compete with game fish.

— Are there any fish that are self-sustaining in relation to fisheries? Yes, 1/3 are stable, 1/3 are over-fished and 1/3 under-fished. Pacific Halibut are in the latter category.

— Biologists have a pretty good feel for the long-lifed fish, such as cod. The average age of the catch dropped from 10 years to eight to three over time, indicating the population was in serious trouble. But it is very difficult to halt over-fishing because of the political reaction. Eventually, there are no fish left to catch.

— Does fish farming reduce the fishing pressure? In New Brunswick, there are only 64 sites suitable for salmon-farming because of the exposure to waves and tides, but there are many more suitable sites in the Pacific, particularly in BC fiords.

The problems with fish farming include:

1. Escaping fish pass on incorrect genetic information regarding migration;

2. pollution travels right through the nets, affecting the fish;

3. disease can spread very fast;

4. the gene pool may be weakened.

— Farmed salmon have twice the shelf life of wild salmon because of the anti-oxidants in the feed. That fact led to a suggestion that humans should eat more fish meal to give them a longer life.

— Are Atlantic salmon established in the Pacific? Yes, a few small ones were found in 1997. Both Atlantic and Pacific salmon have been taken to New Zealand and Australia where they are doing well for the most part. No more imports are permitted at this time, however.

— Is the total catch a good measure of the historic fish population? Yes, but some adjustments may be required. In some cases, records of herring catches were shown as two fish for every three caught. Also, it must be remembered that modern-day nylon nets are twice as efficient as the old tarred ones.

— Did human over-fishing cause the decline of Atlantic cod? Unquestionably. My talk centered on Pacific species where events have occurred more naturally. The drastic decline of the Atlantic cod was likely a combination of over-fishing and the very cold water coming out of Lancaster Sound.

The speaker was thanked by Tasker.

OBSERVATIONS:

— Harry Lumsden has a small group of Golden-crowned Kinglets foraging through the spruce in his backyard. They are likely early migrants;

— Tasker visited Hawaii this year for the first time since 1973. He noticed a great decline in bird populations from hundreds to dozens, and a drop in species from six to three. He speculated the causes might include drought, malaria and the introduced mongoose population;

— Currie visited a black-tailed prairie dog colony near Saltillo, Mexico. He found hundreds of Worthen's Sparrows, a species which closely resembles our Field Sparrow;

— Eadie saw two of the introduced Whooping Cranes at Bosque del Apache, New Mexico. They migrate to Idaho, but are not breeding well;

— Aird told of a Lynx — the first observation in the area since 1970 — which sat in a tree for many days at a farm near Terra Cotta on the Credit River near Toronto, evading all attempts at capture. The wild Lynx turned out to be a pet of the farmer next door, and was completely tame.

— Harvey wondered what the coyotes ate near his home near the Lakeview generating station on Lake Ontario. Through observation, he found they were killing a Canada Goose every night.

On a motion by Falls, the meeting was adjourned.

NEXT MEETING:

The next meeting will be held on April 20, 1999 at 8 pm in Rm 432 of the Ramsay Wright Zoological Laboratories at the University of Toronto. Carrick will speak on "Induced Migration of Trumpeter Swans."

On May 18, Jock McAndrews will speak on "The Geology of the Oak Ridges Moraine.