THE BRODIE CLUB

ROYAL ONTARIO MUSEUM OF ZOOLOGY

The 953nd MEETING OF THE BRODIE CLUB MINUTES

The 953nd meeting of the Brodie Club was held on Dec. 12, 2000 in the Ramsay Wright Zoological Laboratories of the University of Toronto.

Chairman: Ron Tasker
Recording secretary: Sandra Eadie
Attendance: 18 members and five guests

GUESTS:
Peter Kotanen, Leslie Ambedian, Jennifer Thaler and Marc Johnson, guests of Jock McAndrews
Isobel Boardman, guest of Claire Muller

BUSINESS:
Minutes were approved.

SPEAKER:

Chris Darling associate curator of entomology of the Royal Ontario Museum's Centre for Biodiversity and Conservation Biology was introduced by Bruce Falls. Chris first attended Queen's University and later received his Ph.D. from Cornell University.

His topic was Vignettes of Natural History. He spoke about insects, plants, galls and insect parasitoids and the many forms and relationships that have evolved together.

Galls are plant tumours induced by the hatched insect eggs or larva that burrow into the plant.

Darling related that William Brodie, after whom the Club is named, studied galls. In fact, the unpublished biography of Brodie by Louise Herzberg is called A Pocket Full of Galls: William Brodie and the Natural History Society of Toronto. Brodie wrote two papers in the Canadian Entomologist on the moths that make galls on goldenrod. The papers were published in 1909, the year of his death. His findings were based on his annual collections, which began in 1876. His daughter, Miss Jennie Brodie, donated the catalogue of his collection to the ROM in 1932. The collection itself went to the Smithsonian. In the late 1800s galls, called Fitt Apples, were sold as a cure for the "fits". Louise Herzberg spoke to the Brodie Club about her book on Nov. 21, 1989.

Insects and plants account for one million of the approximately 1.4 million species in the world. Studying their ecology and behaviour is essential to understanding the natural world. Galls give us an entry into the complexities of relationships and coevolution among plants, insects and their parasitoids, a tritrophic interaction.

Darling and his students have found a complex world centred upon the goldenrod on the Leslie Street Spit. Flies and moths lay their eggs on the plants and the larvae burrow into the plants, inducing the galls. Larger galls full of larvae or a caterpillar make a tasty morsel for chickadees and woodpeckers in the winter. Other times the larvae are in turn parasitized by parasitoids, in this case, wasp larvae. Then there are hyperparasitoids that feed on the parasitoids. Some kinds of parasitoids also fight and kill off their own kind so that only one wasp emerges in the end.

Darling used a combination of slides, transparencies and video equipment very effectively to illustrate and explain the many possible outcomes and the dramatic battles to survive in these miniature worlds.

He illustrated how the hole used by a caterpillar to expel waste material can be used by parasites as an entry point. He also illustrated how the caterpillar makes another hole for the moth to use as an exit. The hole is beveled so that it cannot be pushed in from the outside. However, about 10 per cent of the time, the moth cannot fit through and dies stuck in the hole.

Another parasitoid lays eggs that then further divide. Other larvae take over the body of a caterpillar, which they feed on while still alive. It bloats up and does not pupate. Eventually it dies, of course, and the larvae continue to eat one another.

Yet another hyperparasitoid waits until the host insect is parasitized and then parasitizes the parasitoid.

Death Watch wood beetles on the other hand create a gallery in the wood of a tree early in the spring and lay their eggs. It blocks the entrance with its own body, but wasp larvae dig through past the body and take over.

Darling also showed us a video of a caterpillar in Vietnam as it cut a leaf and created a hammock for itself to pupate in. This caterpillar is one of few in the world that emits cyanide to stave off predators.

Claire Muller thanked the speaker.

An article in the Spring 2000 issue of the ROM's Rotunda by Chris Darling and Cara Gibson will be of interest: Life and Death on the Leslie Street Spit: Among the goldenrod, a macabre tale of parasitoid life unfolds.

NOTES AND OBSERVATIONS:

John Speakman recently visited Panama where there are not yet so many tourists as in Costa Rica, which has been overwhelmed by ecotourism. He visited some canopy towers near Panama City, a former radar site converted into a hotel and restaurant. He saw numerous tropical birds.

Jock McAndrews has studied temperature records and has found only slight changes over the century. He said there is not much evidence for concluding that winters are on a warming trend.

Last month's notes inadvertently omitted the following:

Jean Iron told the Club about the increase in recent years of Golden Eagles seen at Lake Ontario and Lake Erie hawk watches.

Northern Quebec and Labrador have the largest breeding populations of Golden Eagles in Eastern North America and are the main source of migrant Golden Eagles seen here. Michel Gosselin of the Canadian Museum of Nature says there are probably 200 pairs breeding in northern Quebec and possibly another 400 subadults in that population. He thinks that Labrador may have as many, if not more, suitable nesting sites as Quebec.

Poisoning wildlife is now prohibited in most provinces and states. Trappers in Ontario now have greater restrictions on leg hold traps and are better trained to hide their baits and traps to avoid catching non-target species. There is also less shooting and a greater appreciation of birds of prey. All these developments have helped the Golden Eagle.

Members who have not paid for their 2000-2001 membership may send a cheque for $10 for a single, $15 for a family membership or $5 for corresponding members to Bill Carrick at 307 Laird Dr., Toronto, ON, M4G 3X7.

The meeting adjourned at 9:59 p.m. Club members then celebrated the holiday season together, with conversation and Christmas goodies brought for the occasion by members.

NEXT MEETING:

The next meeting will be held on Tuesday, Jan. 16, 2001 at 8 p.m. in Room 432 of the Ramsay Wright Zoological Laboratories. David Hussell and Erica Dunn will speak on the topic: Setting Priorities for Conservation of Canadian Birds—Beyond VTE (Vulnerable, Threatened, Endangered).