

THE BRODIE CLUB



Established 1921

Website: <http://thebrodieclub.eeb.utoronto.ca>

THE 1,103rd MEETING OF THE BRODIE CLUB

The 1,103rd meeting of the Brodie Club was held on Tuesday, 19 September 2017 in Room 432 of the Ramsay Wright Laboratories of the University of Toronto.

Chair: E. Addison
Secretary: Abraham

The meeting was called to order at 7:30 pm and was attended by 28; 25 members and 3 guests.

Roll Call:

Present: Abraham, E. Addison, R. Addison, Bell, Bertin, Coady, Kortright, Currie, Curry, Daniels, DeMarco, Dunlop, Dunn, Hussell, Iron, H. Juhola, King, LaForest, Martyn, McAndrews, Obbard, Peter, Pittaway, Seymour, Slessor

Regrets: Aird, Beadle, Bryant, Crins, Dengler, Eadie, A. Falls, B. Falls, A. Juhola, Lindsay, Moldowan, Riley, J. Rising, T. Rising, Sutherland

Guests: Sharon Hicks (McAndrews), John Bacher & Mary Lou Bacher (H. Juhola).

Minutes: Minutes of the 1102nd meeting were moved for Jean Iron and seconded by Ricky Dunn. They were approved unanimously.

Committee Reports:

Program Committee

E. Addison reported on upcoming speakers on behalf of the Program Committee. There will be talks on archeology at First Nations sites in October, hummingbird physiology in November, plant distribution in December, leeches in January, and "bugs" in March. February and April are currently still open.

Announcements and New Business

E. Addison gave updates on the health of absent members: Bruce Falls; Jim Rising; and Nancy Dengler. Members agreed to have flowers and cards sent to each.

Slessor provided new information material from Ontario Nature.

A proposal for a membership dues increase and re-categorization was presented by Dunn for Bryant. It was moved by Dunn and seconded by Coady. The proposal is that regular members would pay \$20, corresponding members would pay \$10, and inactive members would pay \$0 but

not receive the monthly newsletter/minutes communication. Discussion followed, focused on two points: 1) the inactive (non-paying) member category and what those members would receive – there was concern by some about the loss of communication with these inactive members; and 2) the need for the increase. The increase was supported by some who pointed out that honoraria should be offered to cover expenses for speakers. The proposal passed.

Slessor raised the question of sponsoring a youth to attend the Ontario Nature youth summit (\$350 cost). We did not receive a request to do so this year, as we have in the past. LaForest moved for sponsorship, and this was seconded. Through discussion, agreement was reached that our participation would depend on club finances. The motion was passed.

Members agreed to move the December meeting from the usual third Tuesday, to December 12, 2017, to avoid holiday rushes.

SPEAKERS:

Six members made presentations:

Ken Abraham: A Visit to the Dewey Soper Migratory Bird Sanctuary, West Baffin Island

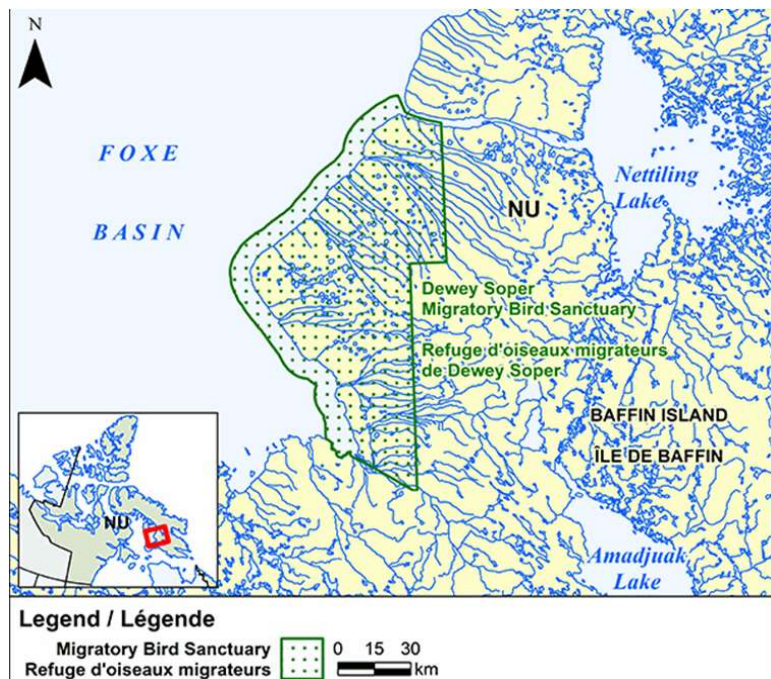
Abraham has participated in Canadian Wildlife Service habitat research for the last four summers, the last two of which have been based in the J. Dewey Soper Migratory Bird Sanctuary (MBS) which covers the Great Plain of the Koukdjuak on the southwest coast of Baffin Island. The sanctuary's namesake was Canada's first Federal Chief Migratory Bird Officer, who conducted arctic expeditions from 1923 to 1931 in the area, publishing over 130 papers and reports on these travels. A hallmark was locating the breeding grounds of the 'blue' Snow Goose.



J. Dewey Soper

Abraham described the habitat work, aimed at assessing current conditions of geese and other wildlife through vegetation, soil, permafrost and other types of assays. He showed examples of the habitats, both goose-friendly and others, among which the Putnam Highlands at the south border of the MBS stood out for their geological features. The highlands are

The sanctuary was established in 1957 to protect breeding Snow Geese and all the other migratory birds of the region; it encompasses 793,000 ha and currently has over two million breeding geese of four species, the largest goose colony in the North American arctic. It is a Ramsar site of international wetland importance, an IBA (Important Bird Area) and a Nunavut Key Habitat Site.



sedimentary limestone with dense fossil deposits. The two-week season tally of bird species was 32 and the two year tally was 34 species. Highlights were finding evidence of breeding by Pectoral and Purple Sandpipers, as well as witnessing the abundance of breeding Sabine's Gulls, Parasitic Jaegers, and Red-throated and Pacific Loons.

Bob Curry: Northwestern Ontario - July 4-9, 2017

Each summer Brodie members Bryant, Curry, Daniels, along with Bill Lamond, take a trip in search of “new” Odonates. Returns are diminishing with each visit, so this summer they took the long trek to Rainy River. They look for everything and began at Moorey, Great La Cloche Island, SUDBURY, where – 25 years after first encountering them – they were delighted to re-discover Garita Skipperlings (*Oarisma garita*). Later, at Pancake Bay, ALGOMA they found Woolly Beach Heather (*Hudsonia tomentosa*) S3, in profusion along the sand beach.



Garita Skipperling (*Oarisma garita*)

A major destination was the Namakan River Bridge, RAINY RIVER, the best-known site for provincially rare, Green-faced Clubtail (*Gomphus viridifrons*). They were not disappointed as it was the commonest dragonfly here.

At Rainy River, we looked in vain for Plains Emerald (*Somatochlora ensigera*). However, a wonderful compensation in addition to the prairie landscape were Variegated Meadowhawks (*Sympetrum corruptum*) and butterflies such as Milbert's Tortoiseshell (*Aglais milberti*).



Green-faced Clubtail (*Gomphus viridifrons*)

The breeding season for birds was about over and the songs of Western Meadowlarks and Bobolinks were desultory and distant. They were dismayed at the amount of farmland that had been converted from hay production to soybean cultivation and feared for the future of grassland birds in this, one of their last strongholds in the province, if the practice continues to expand.

On their return trip, Amish farmland near Sault Ste. Marie provided sightings of Brewer's Blackbirds, Eastern Bluebirds and a Dickcissel, in addition to a quiet pastoral landscape more reminiscent of southern Ontario 75 or more years ago.

Jerry V. DeMarco: Eyes on the Galapagos or ‘Organs of Extreme Perfection and Complication’ on the ‘Enchanted Isles’

This presentation ‘focused’ on the eyes of several different inhabitants of the Galapagos Islands. It began with this passage from Charles Darwin’s *On the Origin of Species*:

“To suppose that the eye, with all its inimitable contrivances for adjusting the focus to different distances, for admitting different amounts of light, and for the correction of spherical and chromatic aberration, could have been formed by natural selection seems, I freely confess, absurd in the highest possible degree.”

Darwin went on to explain how the evolution of ‘organs of extreme perfection and complication’, like the eye, could indeed be explained by natural selection.

Using many photographs taken by Kestrel DeMarco, the remainder of the presentation showcased pairs of slides, with the first image being a close crop of the second and showing only the eyes of a given species:



The second image revealed the photograph’s full frame. In this interactive session, club members were invited to identify each species based on the eyes alone before the second photo was revealed:



Images showing the eyes of the following species were included in the presentation:

Galapagos Hawk (*Buteo galapagoensis*)
Brown Pelican (*Pelecanus occidentalis*)
American Oystercatcher (*Haematopus palliatus*)
Red-footed Booby (*Sula sula*)
Blue-footed Booby (*Sula nebouxii*)
Marine Iguana (*Amblyrhynchus cristatus*)
Nazca Booby (*Sula granti*)
Galapagos Land Iguana (*Conolophus subcristatus*)
Swallow-tailed Gull (*Creagrus furcatus*)
Galapagos Sea Lion (*Zalophus wollebaeki*)
Green Warbler-Finch (*Certhidea olivacea*)
Waved Albatross (*Phoebastria irrorata*)
Sally Lightfoot Crab (*Grapsus grapsus*)
San Cristobal Lava Lizard (*Microlophus bivittatus*)
Galapagos Penguin (*Spheniscus mendiculus*)
Hieroglyphic Hawkfish (*Cirrhitus rivulatus*)
Great Frigatebird (*Fregata minor*)
Galapagos Tortoise (*Chelonoidis nigra/porteri*) – *depicted in the images above

Kristen Martyn: Keeping Solitary Bees

The cocoons of two solitary bee species can be purchased and reared in artificial nesting boxes. For the past two summers, Martyn has reared both species and her presentation focused on their natural histories.

Blue Orchard Mason Bees (*Osmia lignaria*)



The Blue Orchard Mason Bee is originally native to western North America and is now naturalized throughout most of North America. It is a medium-sized solitary bee, roughly the same size as a honeybee, and is a dark metallic blue in colour. It emerges as an adult in the spring quickly, as soon as conditions are optimal and daytime temperatures have reached 10-13°C. Males emerge first and wait for the females to emerge for mating to occur. Mason bees are sexually dimorphic; males can be identified by longer antennae, smaller size

and profuse pubescence on their foreheads. After hatching and mating, the female immediately begins seeking out ideal nesting sites. Once she finds a suitable location, she begins nesting and laying eggs. Females require clay for egg laying. As their name ‘mason bee’ suggests, they collect clay and create partitions in the nesting chambers to separate and protect each developing larva. The female bee will also provide the egg with a ball of pollen, which will be eaten by the larva. After 8 weeks (the female’s lifespan), she will have laid up to 30 eggs. The eggs will soon hatch and the larvae will begin to develop. After spending much of the early summer as larvae, they develop into

pupae and finally adults. The adults remain inside the cocoons until the spring when they emerge. They are extremely early and efficient pollinators of fruit and nut trees, flowers and vegetables and can pollinate up to 2,000 blossoms in a day. In the wild, mason bees nest in hollow stems, woodpecker drillings and insect holes found in trees or wood. Mason bees are active until early summer by which point they have laid their eggs for the following season. Blue Orchard Mason Bees are known as gentle bees and can be observed at close range without fear of being stung.

Alfalfa Leafcutter Bee (*Megachile rotundata*)



The Alfalfa Leafcutter Bee is a naturalized species in Ontario, brought to North America from Europe in the 1930s to save the alfalfa industry. It is a relatively small solitary bee roughly 6-9 mm in length, dark brown in colour and with light yellow striping. Adults emerge in the summer after 4 weeks as pupae. Males emerge first and wait for the females to emerge for mating to occur. Leafcutter bees are sexually dimorphic; males can be told from females by longer antennae, smaller size and copious pubescence on their foreheads. After mating, the

female immediately begins seeking out ideal nesting sites. Once a suitable home is found the Alfalfa Leafcutter Bee will build its nest using pieces of leaves for the lining, overlapping leaves to make a cylindrical cavity that looks like a cigar to protect her eggs and larva. She chews leaves into small circular discs 2.5 cm in diameter and arranges them in place before laying an egg. This cutting activity does not irreparably harm the source plants. The female will also provision the egg with a pollen ball. After 6 weeks, the female's lifespan, she will have laid between 28 to 30 eggs. The eggs will soon hatch and the larvae will begin to develop. In the late summer and early fall each larva develops into a pre-pupa larva and hibernates thus until the spring when it pupates.

Alfalfa Leafcutter Bees are very efficient pollinators. They prefer legume blossoms, but are not limited to one plant's nectar. These bees are summer generalists that pollinate most flowers as well as melons, peas and other fruits and vegetables. Leafcutter bees are a gentle bee and like mason bees, can be observed at close range without fear of being stung. Alfalfa Leafcutter Bee larva are particularly susceptible to parasitic wasps. Wasps use their ovipositor to penetrate the leafy covering and lay eggs on the bee larva. The wasp larvae quickly develop and consume the host. The presence of pin-sized holes can identify affected cocoons, which should be removed and destroyed. Fine mesh bags can be used to keep parasitic wasps out until the adult bees emerge.

Justin Peter & Marty Obbard - Impressions of Canada's High and Middle Arctic

Both Peter and Obbard worked as resource staff on Arctic expedition cruises presented by Worldwide Quest to the Canadian University Alumni community this past summer; Justin was on one of the expeditions (along with Jean Iron) and Obbard was on both. Peter was in training for managing expeditions and this was his first visit to the Arctic. It is an impressive environment for the differences in scale that a first-time visiting naturalist encounters. Due to the barren appearance and usual lack of a frame-of-reference in the environment (such as trees), distances are often significantly vaster than one might think, for example, cliffs can in reality be many times higher than a first estimate. The expedition Peter was on began in Resolute on Cornwallis Island, cruised east in the Parry Channel below Devon Island, and around the east side of Devon before following

the north and then east side of Baffin Island all the way to Iqaluit. A fascinating aspect of Devon and Bylot Islands is the geologic unconformity that may be observed where the bare metamorphic rocks of the Canadian Shield to the east are overlain with sedimentary rock such as sandstone towards the west.



Geologic unconformity at Croker Bay, Devon Island

Peter also discussed the various Gyr Falcon sightings on this expedition. Three separate times, well away from land, a Gyr Falcon would fly over the ship; on one occasion, the bird was carrying prey in its talons and looked as though it would land. On another occasion, the Gyr had eaten as evidenced by its swollen crop. Such visits were in the morning before 7:00 AM and are further evidence that Gyr Falcons spend time far out at sea. Another interesting sighting was a herd of perhaps 50 Atlantic Walrus seen by passengers at Monumental Island, east of Frobisher Bay. This small island is home to a known haul-out site. The animals here are wary and would not allow a close approach, probably due to the fact that they are hunted by humans in this region (in other places such as Svalbard, they have no apparent fear of humans as they are not hunted there).

In addition to participating in the expedition with Peter, Obbard also participated in an earlier trip with the theme "Pathway of Franklin". Unfortunately for all involved, the ice conditions prevented exploration of King William Island and the area where Franklin's ships have been found. From the first expedition, Obbard described an observation of a Polar Bear capturing and eating a Thick-billed Murre in open water. The incident was witnessed from the ship by many and photographed and video recorded. Polar Bears have been reported capturing murrelets before, but not in this way and previously were thought to take them to land. Obbard and others are planning to publish the observation in a journal.



Polar Bear with Thick-billed Murre catch (photo: Boris Wise)

FIELD OBSERVATIONS AND ANNOUNCEMENTS

Dunn relayed a report from Riley that it is a year of many Monarch butterflies. E. Addison reported seeing hundreds. Hussell indicated that it was a mediocre year at Long Point but an improvement from last year's dismal flight.

Guest John Bacher reported finding a colony of 130 Dense Blazing Star (*Liatris spicata*) plants in the Thundering Waters Forest natural area, in an area threatened by development. He indicated that this colony is about the fifth largest in the province.

Hugh Curry recommended the book "Heart of a Lion" about a South Dakota Mountain Lion that walked from South Dakota through Ontario and Sault Ste. Marie and ended up in Massachusetts.

Carolyn King announced that she has some laminated butterfly guides available.

Rose Addison announced that October was election month and that Ricky Dunn would be sending an email to members indicating where help was needed.

BOOK REVIEWS

Curry recommended the book "Astrophysics for People in a Hurry" by Neil deGrasse Tyson.

Kortright recommended the book "The Vital Question" by Nick Lane. The book is about the origins of life with a focus on energetics.

NEXT MEETING

The next meeting will be Tuesday, October 17, 2017. The talk will regard archaeology at a First Nations site.

The meeting was adjourned at 9:29 pm.