

# THE BRODIE CLUB



ROYAL ONTARIO  
MUSEUM OF ZOOLOGY

## THE 984<sup>th</sup> MEETING OF THE BRODIE CLUB

The 984<sup>th</sup> meeting of The Brodie Club was held on April 20 in Room 432 of the Ramsay Wright Zoological Laboratories of the University of Toronto.

Chairwoman: Norma Martin

Secretary: Oliver Bertin

There were 26 members and five guests.

Dierdre Tomlinson, wife of David Tomlinson

Diego Garcia Bellido and his wife Iballa Elena Rodriguez Quintana, guests of Kevin Seymour

Rosemary Addison, wife of Ed Addison

Kara Brodribb, guest of John Riley

The minutes of the previous meeting were approved as published.

### NEW BUSINESS:

NOTE: The next meeting was **moved ahead to May 4** to accommodate those members who wish to travel to Pt. Pelee for the annual bird migration in late May. The speaker will talk on the natural history of polar lakes.

Members were notified that Harry Lumsden's wife is ill. Ed Addison offered to take her flowers at the suggestion of Bruce Falls.

Jennifer Young requested an explanation for the "deplorable behaviour" of two members who were ousted from the club in the 1930s. Archivist Sandra Eadie volunteered to research the subject.

Eadie said she had unearthed hundreds of Brodie Club proceedings from 1936 to 1952, including a large quantity of printed proceedings of 15 meetings. She offered them to members, along with hundreds of bookplates.

There was considerable discussion about the June field trip. Members have been invited by the Mullers to Wolfe Island, a three-hour drive, and to Jim Bendell's research station in Gogama, a somewhat greater distance. The members decided to take up an offer to visit Ellen Larsen's cottage near Carden Palvar (Plain/Alvar), an area of great interest just east of Beaverton, two hours from Toronto. The details will be set at the May 4<sup>th</sup> meeting. Tentatively, the members will meet at the entrance to the Cameron Ranch at approximately 8 am on Sunday, June 13, where they may be bused into the

ranch proper. They are invited to bring their own picnic lunch to Larsen's nearby cottage at about noon. Final details and maps will be provided in the next mailing.

There was considerable discussion about the proper name for the area. Jean Iron prefers to call it the Carden Alvar to emphasize its key attraction, while John Riley and Jock McAndrews prefer the longstanding gazetteer term of Carden Plain. Riley noted that the area has many attractions of which the alvar is just one.

Claire Muller wrote to suggest that The Brodie Club "take it upon ourselves to find a new, easily-accessible home for all of our Brodie Club memorabilia." She suggested the club rent a small room in a fire-proof building if no other space can be found.

#### SPEAKER:

The speaker was introduced by Falls. Colin Jones is a biology graduate from the University of Guelph. He acted as a park naturalist in Algonquin Park for several years before his appointment to the Natural Heritage Information Centre, a Ministry of Natural Resources facility in Peterborough where he tracks rare species of all types.

#### DRAGONFLIES & DAMSELFLIES OF ONTARIO

Jones offered an overview of Ontario dragonflies and damselflies, two similar and easily distinguished suborders of the Ordinata, with a total of about 165 species in Ontario. Dragonflies tend to be larger and more robust. They spread their wings horizontally at rest. Damselflies are typically smaller, more delicate and thinner with a needlelike tail. With one exception, they fold their wings vertically at rest.

#### DAMSELFLIES:

There are three families of damselfly.

The Broad-winged Damselflies are a Carolinian-zone family with four species that reach Toronto but not much further. They are typically found near streams. Some are blue or black, sometimes with metallic green abdomens with black outer wings.

Spread-winged Damselflies are the only damselflies to hold their wings at 45 degrees when resting.

Pond Damselflies are often blue or black, sometimes sulphur yellow and blue. One species is red with black on the thorax and another is green with a black thorax. They are usually seen in the late afternoon on pond lilies in southern Ontario. The related Dancer Damselflies tend to fly low near vegetation.

#### DRAGONFLIES:

There are five families of dragonfly.

The Darner family are large, brash, conspicuous insects which commonly eat horseflies and deer flies. Children used to be told that Darners would sew their mouth shut if they talked too much. One way to speciate them is to check the thoracic stripes.

There appears to be two populations. Common Green Darners are migratory. They arrive from an unknown southern location in the second or third week of April, lay eggs and hatch in about six weeks. The adults fly south in the fall, repeat the breeding

cycle and fly north in the spring. The other population overwinters as a larva and emerges as an adult in the spring.

The Pool Darner is fairly large, brown with yellow spots on the thorax. It typically flies under river banks, into nooks and crannies.

The Clubtail family has widely separated eyes and a large expansion at the end of the abdomen. Some like small rapid streams with rocks in the middle.

There are three species of the Spiketail family in Ontario. The female has a very long daggerlike appendage at the end of its abdomen.

The Emerald family are mainly emerald green in colour, sometimes with yellow patches.

Skimmers are the largest family in Ontario. They are found near still water, sometimes in roadside ditches and rich ponds. Most are brightly coloured, often with an iridescent patch on the wings. Some are red and black and some have a white face.

The smallest dragonfly in North America is the two-centimeter Elfin Skimmer. It is yellow and black, reminiscent of a wasp, and very common in the fens on both sides of Georgian Bay.

#### NATURAL HISTORY:

The dragonflies and damselflies typically emerge from eggs that are laid near or in water. The larval stage is called a nymph or naiad. Damselfly naiads have external gills at the end of the tail; dragonfly naiads suck water through a hole at the end of the abdomen and over internal gills. The dragonfly can eject the water at a rapid rate, giving a form of jet propulsion that is used to flee predators.

The naiads typically wait in ambush until prey wanders by. The mouthparts are hinged, allowing them to shoot the mandibles forward a considerable distance in a manner reminiscent of a frog's tongue. The smaller naiads catch daphnia and similar tiny crustacea. As the naiad grows, they move up to small insects and small fish.

After several weeks or years, the naiad climbs onto a rock or vegetation and splits along the back so the adult can emerge. The abdomen and wings expand, allowing the young adult to fly away to a patch of protective vegetation where they wait for several days until the body case hardens. The naiad case is left behind.

The adults are long-lived, capable predators. They are visual hunters that rely on their huge compound eyes to spy their prey. They are very fast, effective and nimble flyers and they can hover or fly up, down, forwards and back. They grab their prey using their six spiny legs, and kill with very sharp mandibles.

Their prey includes beetles, flying insects and even other dragonflies, sometimes bigger than themselves. Some species sit and wait and ambush their prey, while others fly around like an attack helicopter.

They have their own predators, including spiders, frogs, predatory plants and birds. Fish eat the naiads. Even zebra mussels attach to naiads, although they don't seem to cause any harm.

The mating practices are fascinating. The male takes the sperm from the end of its abdomen and deposits it temporarily on a form of penis at the lower rear of the thorax. He flies around looking for a female, and when he finds her, he grabs the back of her thorax using special keyed pincers at the end of his abdomen. These pincers are species-specific and fit into a matching "lock" on the female. If the female approves, she bends

the end of her abdomen around until it can pick up the sperm on the underside of the male thorax. The females physically inject the fertilized eggs into plants, while others disperse the eggs by washing the end of their abdomen in the water at the edge of a stream or pond. The male often remains attached during this process.

Jones said there are many good field guides available for the dragonflies, including *Dragonflies Through Binoculars*, published by Oxford Press, \$29.95 (U.S.). The Friends of Algonquin Park will soon publish their own guide, which lists 130 species found in the park. An organization called NatureServe at [www.natureserve.com](http://www.natureserve.com) is part of a global network that collects data on dragonflies. It typically reports 5,000 to 6,000 sightings a year in Ontario, from Pt. Pelee to Hudson Bay.

Jones provided a bibliography and a checklist of the 165 species in Ontario. The checklist was attached to the written minutes. E-mail members can contact Bertin if they wish a copy.

#### QUESTIONS:

- Eadie saw dragonflies while in a boat off New Jersey. Jones said they may have been migratory Green Dancers. Dragonflies have also been seen on oil rigs in the Gulf of Mexico.
- Bertin asked about the territorial behaviour of dragonflies. Jones said there is some controversy on this subject. Males may be showing territorial behaviour or they may be attempting to mate any passing dragonfly, willing or not. The males fight back, giving an illusion of territorial battles. He described an experiment where marked dragonflies kept their distance from each other, but they also tended to move around, thus confusing their territories. In another experiment, males tried to mate with a dead dragonfly on a fishing line.
- Jock McAndrews asked whether dragonflies could be kept in cages. Jones doubted they would survive because of their need for food.
- McAndrews referred to “sewing needles,” a colloquial expression for dragonflies heard in the United States.
- Seymour asked how close some of the species are to each other, and whether there are lumpers and splitters. Jones said the species tend to have unique lock and key appendages at the end of their abdomen which minimize hybridization. But some species are indeed close, and there may be a degree of hybridization.
- Fred Bodsworth said he has seen large numbers of dragonflies moving together from east to west along the north shore of Lake Erie.
- Seymour asked about extinct species. Jones said a few species seem to have dwindled since about 1900 and are now rare, but none have been extirpated. Habitat destruction, particularly of clear streams, has affected some species.
- George Bryant asked about those species that seem to appear late in the day. Jones said they probably hide in the vegetation during the day.
- John Speakman asked about the geological record. Jones said they go far back. The early species were similar but could have a two-foot wingspan.
- Caddisflies are closer to butterflies. They spin silk, build cocoons and have a complete metamorphosis, unlike dragonflies.

The speaker was thanked by Kevin Seymour.

NOTES & OBSERVATIONS:

- McAndrews has a copy of the Howard Savage/Sadler book on species found in archaeological sites. It can be purchased for \$20 from Trent University.
- Norm Martin said male loons appear in the Bay of Quinte near his home in Belleville around April 10 each year. Females seem to appear around April 20. They greet each other and perform a spectacular mating dance on the water with the female under the surface and the male above. They remain in the area for about five days and then head north.
- Addison has seen his first Mourning Cloak butterfly of the year, the first harbinger of spring. It is purple and yellow.
- Seymour saw 10 loons in a loose flock flying over Oshawa's Second Marsh in mid-to late morning. Usually, they are seen in ones and twos. They over-winter along the Atlantic coast.
- Eadie saw five loons together in South Carolina two weeks ago.
- Jean Iron spied a flock of 60 to 75 Sharp-tailed Grouse on a lek near Gore Bay on Manitoulin Island. "It was just spectacular," she said. She also saw a northern subspecies of the Great Horned Owl and a Ross' Goose in a flock of Canada Geese.
- Paul Aird said his book of fables is in its third printing. He has completed a book of poetry and is seeking a publisher. He spied lots of Yellow-spotted Salamanders in a small pond near Inglewood. They appeared when the water temperature reached 8C.
- Larsen saw a tremendous road kill of frogs all heading west. Sandhill Cranes were paying close attention to the frogs. She has also seen wild turkeys roosting in trees.
- About 2,500 Red-necked Grebes were seen flying across the lake near Lorne Park.
- Norma Martin said her husband attracted the attention of the Belleville police when he attempted to shoo away two crows that were trying to nest near his home. They thought he was a terrorist.
- Addison said loons were sometimes seen in groups of 75 or so along the Ontario Manitoba border. They are usually seen in pairs elsewhere.

The meeting was adjourned at 9:43 pm.

NEXT MEETING:

The next meeting will be at 7:30 pm in Room 432 of the Ramsay Wright building on **May 4, two weeks earlier than usual**. Limnologist Mary Ann Douglas will talk on the natural history of polar lakes.

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