

THE  
BRODIE  
CLUB



ROYAL ONTARIO  
MUSEUM OF ZOOLOGY

The Brodie Club  
Picnic and Field Trip

The Brodie Club met for its annual field trip and picnic on June 3, 2007 at the Niagara Glen, a beautiful spot just downriver from the Whirlpool on the Niagara River. The host was Robert Ritchie, a parks naturalist with The Niagara Parks Commission and son of long-time member Robert Ritchie, who kindly gave us a long and interesting tour of the area.

There were 16 members and guests, including Bruce and Ann Falls, Ed and Rosemary Addison, Fred Bodsworth, Hugh Currie, Mary Boswell, Oliver Bertin and respective families, along with Maximus, Eleonora Bertin's tiny Dachshund.

Members met at 10 am at The Glen. Ritchie took us down 250 feet to the river, through a beautiful, secluded flatland, not logged since the 1880s. The glen is almost a Lost World, an isolated area that is wedged between 250-foot cliffs and a fast-flowing river. The only way down is via a metal staircase that most animals would find difficult to use.

Part of the area we visited is named Foster's Flats after a hermit who occupied the area until The Niagara Parks Commission appropriated the land in 1894. Foster reportedly used a small sawmill to square off harvested logs, which were floated down river to Queenston.

The Glen was (un-eroded) solid rock until about 8,000 years BP. The falls have moved back steadily since the water first flowed around 12,000 years BP at the edge of the Niagara Escarpment at Queenston Heights. Water passing over the falls continues to erode and undermine the many strata of sedimentary limestones, sandstones and shales, causing the top layer of harder dolomite limestone to collapse into the Gorge. In the Glen the strata of red Queenston Shale can be first observed just at the current river level.

Huge limestone boulders tumbled down to the river floor when the falls were creating the Niagara Glen between 8,000 and 7,000 years BP. Some had potholes, carved out by the swirling waters spinning small stones around like the action of a mortar and pestle, and many had a dense covering of mosses, lichens and tiny herbaceous plants.

Erosion was 3 ft/year before the water of the Niagara River was diverted for power purposes; now it is about 1 ft every 10 years. The river is far less furious than it was only a few years ago. During the tourist season, 50% of water is diverted for power

production between 7 am and 11 pm. During the night in summer and in the off-season, 75% is diverted. As a result, the water levels are about 10 feet below normal. Ritchie noted that the whirlpool always goes counter-clockwise, until 75% of the water is diverted, when it subtly switches around and goes the other direction.

Fauna included a very noisy Carolina Wren, Cardinals, Robins, red squirrels and one black squirrel with a red tail. Ritchie said bank beavers are found downstream, where they live in burrows under the rocks at the bank. There are no deer in the glen; some foxes. The area used to have Timber Rattlesnakes – picturesquely named *Crotalus horridus* – but they were extirpated in Canada years ago by local Natives and farmers who killed hundreds at a time. The snakes used to overwinter in hibernacula in the Glen, and came up to the plateau above to feed. They wouldn't survive today, given the 14 million visitors to the falls every year, the roads and the traffic.

Flora included a wide variety of Carolinian species including many rare species found only in a few spots in Canada. The list of observed species included:

Sassafras trees, Chinquapin oaks, three forms of poison ivy, Canada Moonseed, Black Walnut, Tulip Trees, Jack-in-the-Pulpit, Witch Hazel, Butternut, lots of Sugar Maples, Alternate-leaved Dogwood and a lone remaining White Pine (that we didn't see). There were many tall, straight trees; some without branches for 50-60 feet. The Addisons took photographs of Smooth Cliffbrake; a Butternut tree showing effects of blight; American Bladdernut; Moonseed; Poison Ivy; Maidenhair Spleenwort; lots of Wild Ginger, a moss-covered boulder, a Sugar Maple with a twisted trunk and a four-foot diameter Tulip Tree.

Rosemary Addison added a series of photographs with the attached outlines:

- On cliff face, Hairy Beardtongue (*Penstemon hirsutus*) and Smooth Cliffbrake.
- Bark of butternut showing effects of butternut blight, a problem only around for a couple of years.
- American Bladdernut – shrub with a distinctive seed case and striated bark. Seed rattles around in dry bladder in winter – quite noisy in wind.
- Canada Moonseed. Berries are highly poisonous. Fruit very similar to wild grape and sometime grow together. The leaves and fruit look quite similar.
- Maidenhair Spleenwort.
- Tulip Tree – largest tree in gorge – 4 ft. diameter trunk, first branch 60 feet up.
- Large-Flowered Leafcup – because of leaf bracts.

Rosemary or I can email photographs to anybody who would like them.

Then Ritchie took us to the Butterfly Conservatory where we had a tour of the back shop, where they breed 1,000 mainly tropical butterflies a week and the plants they need to feed them, and a tour of the Horticultural School gardens where we saw a very keen male peacock trying to impress a very bored female acquaintance.

**Robert Ritchie** sent the attached note following the picnic:

I enjoyed our outing together with the other members and guests of the Brodie Club. The Niagara Glen, and indeed, all of the Natural Areas within The Niagara Parks Commission (~ 885 acres out of our 4,000 acres jurisdiction), is very special and continues to be a major focus in my work here. Perhaps we may get another opportunity in the future to visit other parts of the Glen, since I was only able to show you one small part of it. Leslie Foster was pleased to be able to share the "behind the scenes" at the Butterfly Conservatory; this facility is celebrating its 10th anniversary during 2007. We are all very proud of the Niagara Parks Botanical Gardens and School of Horticulture which ranks amongst the best in the world; there is always something to see here during all seasons.

For anyone in the Brodie Club interested in our plant collection at the Gardens they can visit the following website:

<<http://rbg-web2.rbge.org.uk/Niagara/queryform.html>> .

To visit/search many of the other major plant collections in the world, including ours, go to: <<http://rbg-web2.rbge.org.uk/multisite/multisite3.php>> .

To follow some of the work that keeps me busy check out [www.niagaraparksnature.com](http://www.niagaraparksnature.com) <<http://www.niagaraparksnature.com>>.

Best wishes, as always

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#### NEXT MEETING

The first meeting of the fall will be Tuesday Sept. 18, 2007, probably in Room 432 of the Zoo bldg. It will be a Members' Night, so bring your stories of the summer.



See you all in the fall.