

THE
BRODIE
CLUB



ROYAL ONTARIO
MUSEUM OF ZOOLOGY

THE 988TH MEETING OF THE BRODIE CLUB

The 988th meeting of The Brodie Club was held on November 16, 2004, at 7:30 p.m., in Rm. 432 of the Ramsay Wright Zoological Laboratories of the University of Toronto.

Chair: Jennifer Young
Secretary: Trudy Rising

There were 23 members and six guests:
Maryann Burbidge, guest of Marc Johnson
Sharon Hick, guest of Jock McAndrews
Dan Strickland, guest of Bruce and Ann Falls
Gavin Clark, guest of the speaker, Dan Strickland
Rosemary Addison, guest of Ed Addison
Richard Joos, guest of Mary Boswell

The minutes of the previous meeting were approved with one correction: "Mary Boswell reported that, in the past week at the Bird Observatory on the Leslie Street Spit, a Yellow-breasted Chat was caught and banded which is a first for the Observatory. As well, a Red Knot was seen on the beach and a Barred Owl flew in and landed on top of a mist net pole while someone was extracting a Winter Wren. The owl then flew and perched on a tree branch just off the path remaining there for about fifteen minutes."

NEW BUSINESS:

Bruce Falls announced that **the meeting for December will be moved ahead to the 2nd week of December, December 14.** This is members' night to bring goodies, preferably homemade. Bruce announced that our presenter for the evening will be from the University of Guelph. His title will be Conservation of Reptiles in Canada.

SPEAKER:

Our speaker, Dan Strickland, was introduced by Bruce Falls. Dan's early interest in birds shifted to biochemistry; he studied in France, then came back to the U of T, and studied finally at the University of Montreal. He retired as a park naturalist from

Algonquin Provincial Park in 2000, and went to China to study the Siberian Jay, similar to the Gray Jay on which he has concentrated his studies in North America.

Dan feels lucky to have been able to study the Gray Jay – the 8th wonder of the universe -- for these many years. (Russ Rutter, past secretary of the Brodie Club got him interested in the species.) It's a species that does the impossible – has permanent territories in boreal and sub Alpine Canada. The species has a clouded future in today's changing climate.

As well as studying the bird at Algonquin, Dan has studied it at Parc de la Verendrye and Anticosti Island.

Gray Jay habitat is in low lying areas of black spruce and tamarack along rivers. To study the jay, Dan put up suet as bait on trees at the edges of bogs. Capturing Gray Jays is done from nests (high in black spruce). He patrolled a territory to show he could be a source of food. He colour bands with specific colours on both legs so he can identify every bird in the field by sight.

Nests are very difficult to find, but if they're offered kleenex or cotton batten, they'll get it and fly to the nest; following them to the nest is then pretty easy to do. Later in nest building, they use feathers in building. He finds about 20-22 nests per year at least. They're spread over a huge area; again, you can't see the nests; you have to be led to them. He watched through incubation in order to band chicks when hatched (23 days as nestlings).

Certain patterns begin to appear; winter, 1967 and succeeding years, he found nests were very close to where they'd nested in previous years; they stay on the same territory. A territory is about 69 hectares in Quebec; 146 hectares in Algonquin. Mortality is about 18%/year, which is low for birds (30-50% for most). Most mortality is in the summer; probably sharp-shinned and other hawks.

The Gray Jay eats arthropods, carrion, young birds; they don't eat seeds of conifers as they can't open cones. As well, they can't depend on a steady supply of carrion. So, is there any food source that ensures winter survival? Yes, clearly it's because the Gray Jay stores food – it breaks bread into bits, mixes it with saliva into a bolus, and stores it in lichens.

He marked food with blue dye and toward the end of the season found a fecal sac with blue dye – about 40 days after the adults had eaten the dyed food. (He also found that a nestling that died had blue stomach contents long after the adults had been fed the dyed food.) These findings show clearly that storing is occurring and that they do recover at least some of it.

Three odd things that the Gray Jay does – why?

1. Why nest so early? They start courtship in late February, and begin incubation in early March for about 20 days; incubation without a snow is unlikely, yet they stay on their three eggs. The nestlings show no special adaptations for this early hatching; yet, Dan's never seen a starving Gray Jay – the stored food allows them to nest this early.
2. Why not nest later or why not twice? He looked at the summer part of the cycle. Parents tend to be observed with one juvenile at that stage. This gives them a lot of time for food storage for their early nesting.

(Food stored early in the summer has to be in usable form for winter. Gavin Clark thought that maybe saliva has an anti-bacterial effect, but he ran tests that showed it does

not. He took a log with holes, put mealworm in each; Gavin found about 10% nutritive value was still there at nesting season.)

3. A third problem Dan's been interested in is an aspect of their breeding biology. Parents and one non-breeder stay together. They do not participate in feeding new young and, in fact, are actively excluded by the parents (unlike the Florida Scrub Jay, where the young do help; Alexander Skutch, 1935 study). (Dan and other researchers suggest the "helping" label should be changed to allofeeding.)

Allofeeding seems evolutionarily to be the next best thing if you can't get your own territory – then why don't Gray Jays do it? Only after the young have left the nest, then these non-breeders do feed the young (recall, the parent chased them away earlier.)

Tom Wade and Ch. Sterle published the idea that parents want to reduce the no. of visits to the nest; predation by mammals is a possible reason. He noted that the Siberian Jay has similar behaviour.

Prediction – if this is so, then adults, too, should try to have as few visits as possible. He found a rock bottom number of visits. What predator poses a threat? Probably the red squirrel. The Predator-avoidance hypothesis "fits;" he thinks this can be expanded to other species (Florida Scrub Jays do allofeed; no red squirrels there. Mynahs in Australia have a lot of allofeeding; there's no other diurnal predator there either.

4. A new question – the genus *Parsorius* (Siberian Jay, Sishuan or Sooty Jay, and Gray Jay) all have ranges tied to spruce. In Arizona, lots of Engelmann Spruce but not in the Sierra Nevada – pines, etc., but no spruce.

What is the link? They don't eat the seeds. Something about the micro-chemical composition of spruce, perhaps, that prevents bacteria from breaking down food stores?

By 2100, there will be no Gray Jays in Algonquin because levels of carbon dioxide will have pushed the boreal forest farther north. Forty four Gray Jay territories are now not occupied. All territories in the first parts of Algonquin studied in the mid-1900s are now empty of Gray Jays. (1980s-2000 – winters were gradually warmer, except 1994 and 1996; they did better in those years.) Gray Jays do better when the food can be kept colder. So global warming is a new threat.

In summary, over his 35 years, he has concluded that, yes, the Gray Jay is the 8th wonder of the universe.

QUESTIONS

Oliver Bertin asked about competitors for food. Jim Rising asked about Audubon's depiction of a Gray Jay on white oak (Dan says he's never seen Gray Jays on white oak); Enid Machin asked about their habitat in the southern part of their range; Dan says if they're about the area, there are bound to be bogs there; Marc asked about mortality rates, and Ken Abrams, likewise asked questions about mortality.

Ron Pittaway thanked the speaker.

NOTES & OBSERVATIONS

- Fred Bodsworth saw a half dozen Snow Buntings on Nov. 3 at Port Burwell, and a Black-bellied Plover and Northern Shrike at Leslie Street Spit on Nov. 16.
- Paul Aird brought to our attention the two page spread in the recent National Geographic supplement showing birds killed at buildings in Toronto.
- Ed Addison saw a flock of about 700 sandhill cranes on Manitoulin Island the 1st week of November.
- Aarne Juhola, Treasurer, took this opportunity to ask members to pay their dues.
- Jock McAndrews commented on a spectacular sunset (pink sky) in the east on his way east of Whitby. No one had a particularly good explanation of how it might have been caused.
- Jean Iron commented on the northern species of owls that are moving into southern Ontario; for example, on Nov. 3, a Barred Owl at Cranberry Marsh; they watched it with a vole, as it regurgitated a pellet from its previous meal. The owl 1st pulled out the stomach, and put it to the side. It devoured the rest, preened, then dropped the stomach off the branch. Ron says records of North Hawk Owls doing this are common (wolves also leave the stomachs, Ron said). Bruce also commented on seeing, as a young person, lots of short-eared owls leaving stomachs of small mammals on a golf course at Bathurst Street.
- Oliver Bertin commented on the spectacular Northern Lights seen here in the city last Sunday night.

The meeting adjourned at approximately 9:45 p.m.

NEXT MEETING

Again, please remember that the December meeting will be a week early, not the 3rd week of the month but, rather, the 2nd Tuesday, December 14. A great presentation is anticipated and wonderful holiday goodies!

AND SOME OTHER NOTES THAT FOLLOWED OUR MEETING:

NOTES AND OBSERVATIONS FROM THE WEST

By Yorke and Joan Edwards <yjedw@shaw.ca>
No. 2 Y E Okanagan Pronounced OO-can-aw-gun.

British Columbia's Okanagan is not like any other region in Canada, and neither are its mammals, birds, snakes, insects, bushes, and other plants. Trees are rare in the grasslands except for willows near lakes and rivers. The grassy area is about 140 miles across and 200 miles S. to N, and its most unusual Canadian part is a large flat land next to the USA. On both

sides of it are rocky hills with scattered trees. Now towns there are swelling and also growing miles of fruit for wine. These destructions cover some of the natural past, but large natural areas still remain for naturalists in the driest and best southern half. It is a grassland with rocky sides, and it remains an area of unusual Canadian attractions. A flowing river goes south through its lakes, a major attraction even in winter with their numerous ducks and other kinds of water birds, but spring and fall are best.

The valley is a Mecca for birds. For those people who see the world only as set forth in the bird guides, spring in the Okanagan

birders can be an experience close to religious fervour. My pilgrimages have been in all seasons for best stage, best songs, best actors, and best shows of the year. Searching among memories from many visits, I can hear choruses from western meadowlarks; I see mineral-rich sloughs alive with grebes and ducks of many species, sound effects by yellow-headed blackbirds; I hear thin sweet songs mingling with warbled phrases from a sage thrasher in a huge amphitheater of pungent sage; I see big, noisy long-billed curlews from a large sea of grass under a blue sky with white puffs of cloud, and I hear a canyon wren making sheer rock walls ring with repeated cascades of pure and forceful notes. The above is in my foreword for the book *Birds of the Okanagan*, 1987, written by the Canning brothers, Robert, Richard, and Sydney. Their family of naturalists is as famed as the region, the three now one in Okanagan, two in Victoria.

One spring day driving home from Wells Gray Park I decided to go to the small White Lake, in its grasslands and nearby rocky cliffs. It is not far from the United States. I arrived at dusk and slept beside my government Jeep truck and above a gentle slope down to the lake. A poorwill called in the night. At dawn a brewer's sparrow's song was but a few yards away, and the loud calls of a long-billed curlew were probably what had awakened me. Later I stopped at rocky cliffs that sang songs of rock wrens as I watched white-throated and Vaux's swifts swinging by the high walls of rock near their nests. Four hummingbirds species are here, but I saw none.

In some trips I stopped in evenings among scattered trees at the edges of the grasslands. A few of special birds seen were

pygmy nuthatches, calliope hummingbirds, Lewis woodpeckers, white-headed woodpeckers, and where there were crowds of shrubs with nesting birds like yellow-breasted chats- Mammals were seldom seen, but did see bighorn sheep down for water; the rare mountain cottontail on the run, and once a noisy pair of rattlesnakes warning me from a few yards away. Whenever I think or see the word Okanagan, I wish I was there. The Okanagan is wonderfully different from anywhere else in Canada.

The night is rising

Jock McAndrews and Paul Aird referred members to an item in *The Globe & Mail* on Nov. 17, 2004:

Often when I'm out watching a beautiful sunset, I'll do something that confuses anyone who happens to be nearby. Just as the sky show becomes really good, I turn around and face east. The reaction I get is usually a puzzled look, followed by a gentle reminder: 'Uh, what are you doing? Sunset's the other way.'

Perhaps even more perplexing to them is my response: 'Well you're watching the sunset and I'm watching night rise.'

The next time you have a cloudless sky, try it yourself. Face east, just as the sun is setting in the west. Low against the eastern horizon you'll see an immense purple arc, bordered by a fringe of pink just above it. That is the shadow of the earth.

The fringe of pink, also call the Belt of Venus or the "anti-twilight arc" is caused by the reddened sunset light that's passing through the atmosphere itself.

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