

## Notes

### About Crossbill Bills

John Schmelefske

2001 could certainly be described as the year of the crossbill in areas of Ontario south of the Canadian Shield. The first nest of White-winged Crossbill (*Loxia leucoptera*) in the Greater Toronto Area was discovered in the Palgrave Conservation Area in February of 2001 (Coady 2001). In the fall of 2001, as predicted by many observers in the north, the poor cone crop on the Canadian Shield resulted in a large movement of finches southward. On my own property, approximately 5 km south of Alliston, Ontario, from September through November, I observed Purple Finches (*Carpodacus purpureus*), Evening Grosbeaks (*Coccothraustes vespertinus*), Pine Grosbeaks (*Pinicola enucleator*), Pine Siskins (*Carduelis pinus*), White-winged Crossbills and Common Redpolls (*Carduelis flammaea*) at various times, along with the usual American Goldfinches (*Carduelis tristis*) and House Finches (*Carpodacus mexicanus*).

Crossbills have always gotten a lot of attention for their amazing bill adaptation, and rightly so. Last fall was the first time I had ever had White-winged Crossbills coming to my feeder. The first arrivals were two juveniles, which I first noticed

on 28 October 2001. By 2 November, there was a small flock of six or seven birds hanging around the feeders. This provided me with a great opportunity to test out my new digital camera.

The feeders I use are clear plastic tubes with tiny teardrop-shaped holes for access to the seeds. I remember many years ago when I bought my first niger feeder, I initially thought I had gotten a faulty unit because the holes were so small it did not seem possible that the birds could get the seeds out. Of course, it proved to be no problem for finches. This time around I wondered whether their crossed bills would actually make it harder for crossbills to feed from a niger feeder. I soon realized that crossbills could use their tongues very effectively to manipulate seeds. They would stick their upper mandible in the feeder and leave the lower mandible pointing to the side. Then they would use their tongue to wedge a seed against the upper mandible and slide it out of the feeder (see Figure 1). Clearly, the unusual beak is only one of their assets. It makes sense that while the bill would be helpful in prying cones open, they would need

a dexterous tongue to finish the job.

Unfortunately, one of my White-winged Crossbill visitors had a terminal encounter with our sliding doors. The autopsy revealed curious markings on the upper mandible of the beak (Figure 2). I wondered if these abrasions might have been etched into the bill by the edges of the openings in the bird feeder. I had bought new niger feeders that year and thought that perhaps the sharp edges of the plastic were hard enough to cause this kind of damage. The scratches were superficial, but potentially, this could have a significant impact on wintering birds during years when

resources are low and crossbills start coming to feeders, as they did in 2001. My impression was that these marks were not deep enough to cause serious damage, but that over a whole winter it might be a problem. It may be that, because of the bill shape, crossbills have to do more maneuvering to access niger feeders and consequently are more susceptible to bill damage.

### Discussion

I have no way of knowing with any certainty whether the bill markings were actually made by the feeder openings. I did not notice the marks on the beak until I looked at the



**Figure 1: White-winged Crossbill removing seeds from niger feeder. Photo by John Schmelefske.**



**Figure 2: Dead White-winged Crossbill with abrasions on the bill. Photo by John Schmelefske.**

pictures later, long after tossing the remains over the back fence. I went over the 60 other photos that I took of crossbills at the feeders, and saw no obvious similar markings, but this may be because the pictures were taken at too great a distance to pick up such details. Are there other possible explanations for these marks? Well, I doubt whether conifer cones would have the degree of hardness necessary to cause such damage. I considered whether the marks might have resulted from the impact on the window, but they look like etchings on the surface, not fractures due to impact.

Craig Benkman, crossbill expert and author of the White-winged Crossbill account in *The Birds of North America* (Benkman 1992), kindly examined my photograph and considered that the “conclusions concerning wear on the bill seem reasonable, although I doubt that such wear even over a winter would prove harmful to the bird” (Craig Benkman, pers. comm.).

Thinking about crossbills got me thinking about crossed bills. One thing I noticed from my pictures was that some crossed bills go top-to-the-left and bottom-to-the-right, while others go top-to-the-right and bottom-to-the-left. I won-

dered whether there is a theory as to why they go either way and whether the ratio of each alternative had been measured?

A search of the crossbill literature revealed that the lower mandible of the North American subspecies of the White-winged Crossbill (*L. l. leucoptera*) crosses to the right approximately three times more often than to the left (Benkman 1988), while the lower mandible of the Red Crossbill (*L. curvirostra*) “crosses to right as often as to left” (Adkisson 1996). Why the difference? Benkman (1996) theorized that the 1:1 bill type ratio in Red Crossbills “results from negative frequency-dependent selection favouring the rarer morph. A crossbill always orients toward closed conifer cones so that its lower mandible is directed towards the cone axis (Benkman 1987). Thus, only part of the cone can be reached easily when crossbills have few perch sites and the cone cannot be removed from the branch or otherwise turned around. Since crossbills may visit cones which have previously been foraged on by other individuals, an equal frequency of left-to-right mandible crossings may minimize overlap in the use of cones and enhance foraging efficiency.” In contrast, our White-winged Crossbills “forage on cones that are easily twisted and removed from branches”, and since they manipulate the cones for efficient foraging, there is no selective advantage for the rarer morph (i.e.,

lower mandible crossing to the left) in that species (Benkman 1996).

Even more intriguing is whether one variant spins the cones one way when it eats and the other spins them the opposite way? Craig Benkman (pers. comm.) stated that this does not appear to happen, but that he had not systematically tested it. Does one approach cones from the left, and the other from the right?

According to Bent (1968), based on studies of captive Red Crossbills by Tordoff (1954): “Birds are either right-handed or left-handed in opening cones, according to which way the mandibles are crossed. In feeding, the birds carry pine cones with their bills to a perch, hold the cones with their feet, and insert the tips of the open mandibles. With the long axis of the bird’s head approximately at right angles to the long axis of the cone, the tip of the lower mandible presses towards the central axis of the cone and raises a scale against the essentially stationary tip of the upper mandible. The tongue then probes and removes the seeds.”

Perhaps even more fascinating is the following account of Red Crossbill roosting behaviour in Bent (1968), again based on research by Tordoff (1954): “Before going to sleep birds extend and retract their tongues, three to five times a second, for as many seconds. After a pause, they repeat the process. The tongue may project on either side of the mandibles, and it extends well

beyond the tips. Sizable clusters of white frothy bubbles appear at the ends of the bills. These clusters soon break, leaving the mandibles wet and shining. Coincident with the tongue action the birds open and close their bills, but at a slower rate. Also, they close the bill in the "wrong" direction, resulting in a peculiar appearance because the mouth will not close evenly. It is possible that this procedure brings about a wearing down of the non-occluding edges of the bill by abrasion, with the moisture acting like water on a whetstone."

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Clearly, the crossbill is a bird worthy of observation. In many ways they remind me of parrots, with their highly evolved and dexterous bill and tongue. Behaviourally, the way they forage so gregariously in groups, hanging upside down and stretching to reach food, makes me think of them as the boreal parrot.

### Acknowledgements

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## J. Bruce Falls: Distinguished Ornithologist

Ron Tasker

I am honoured to present my long-time friend and field companion, Dr. J. Bruce Falls, Professor Emeritus, Department of Zoology, University of Toronto, for receipt of the prestigious OFO Distinguished Ornithologist Award on 28 September 2002. I am honoured, both by being asked to do so by OFO, in whose institution as a distinct organization from the FON, I was involved as the FON Board representative, and by such a close identification with Bruce, wearing two of his many hats: that of internationally recognized professional biologist and all round naturalist and birder.

We both graduated from Victoria College in 1948 in Honour Science, he in Honour Biology. Bruce joined the University of Toronto Department of Zoology in 1954, was tenured in 1961, and promoted to full professor in 1966, serving as undergraduate secretary from 1969 to 1975 and associate chair from 1975 to 1980. He was appointed Professor Emeritus in 1989.

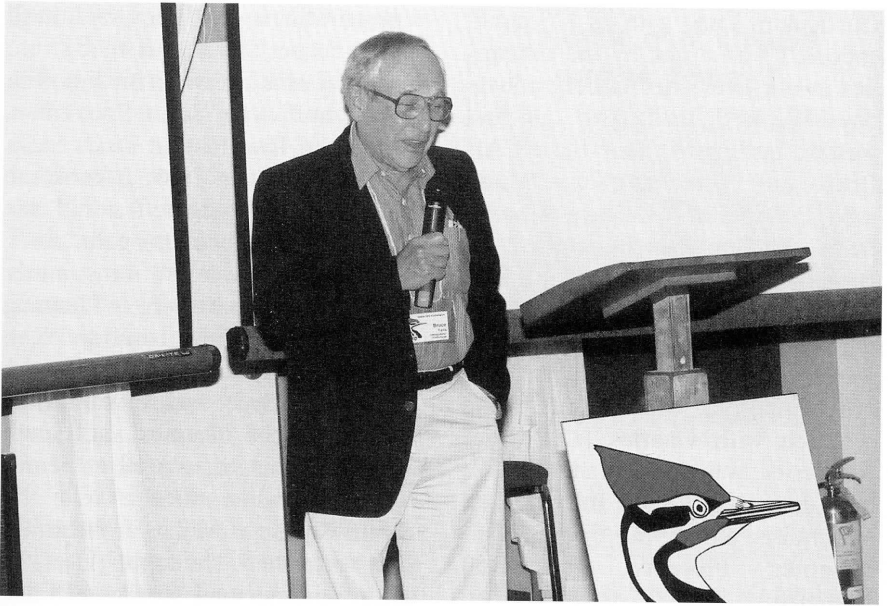
Thinking back to those earlier years, birding was not the big budget item it is today. We had to rely on the Red, Green and Blue Books of the *Birds of North America* (1931). Nor was good equipment available. Where I relied on family opera glasses, Bruce was more inventive with a badly scratched World War I

gun site, used as a 6X30 monocular, which he bought from John Crosby for \$4.00, and an ersatz telescope built out of one of his father's surveying instruments.

Most important, birding buddies were scarce. One almost never saw another person looking at birds, and I at least felt significantly insecure as to try to hide my activities when I went out. Whereas Bruce was inspired by a neighbour, Gord Giles, teachers and by Sunnyside and High Park, I got turned on by my father and the Don Valley where his Taylor antecedents farmed for several generations.

It was not until I started university in 1944 that I first met other naturalists, when John Speakman and Joe Wheeler invited me to join them on their raptor nest bicycle expeditions, north of Toronto. In the fall of 1945, I first met Bruce who at the time was returning to second year Honour Biology after serving his tour in the RCAF from 1943 to 1945.

He took me out to surrounding "hot spots" and very slowly I began to learn how to tell one bird from another and to distinguish their songs. I also bought my first Eastern Peterson. Bruce introduced me to such luminaries as Terry Short, Lester Snyder, Ken Mayall, Cliff Hope and Jim Baillie. He spon-



**Figure 1: Dr. Bruce Falls accepting the Distinguished Ornithologist Award at the OFO Annual Convention in Kingston, Ontario, 28 September 2002. Photo by Rory MacKay.**

sored me for membership in the TOC and Brodie Club, and most important, introduced me to his friends, including Bob Ritchie, Bob Lanning, John Crosby, Yorke Edwards and Alex Cringan, who was my future wife's (Mary Craig) cousin. I had never heard of a birding trip until Bruce and his entourage took me to Hamilton, introducing me to Rock Chapel, Lake Medad and then to Long Point in March 1946.

In May of the same year, he took me to the ultimate destination, Point Pelee. I will never forget the 6+ hour drive in Bruce's father's car, almost driving off the Leamington dock into Lake Erie in the dark, camping out on a sand

dune, which in the morning turned out to be covered by Prickly Pear Cactus, now long gone. I cannot recall a better fallout of especially warblers in the flowering apple trees in the orchard, also long gone. Entering the park was simple then. The gates were usually open, rarely policed by the RCMP, and you could drive and camp anywhere you liked. No crowds then; birders were few on the ground. The trip culminated with us all convincing ourselves we had found a Richardson's Owl among the cottages near the base.

Although Bruce then went on to become an international figure, whereas I simply enjoyed natural history, while I was reviewing his

Curriculum Vitae with its 126 publications, I was struck by the similarities in our lives after undergraduate days. We both thrilled to our first western birding. While in the RCAF, Bruce was posted at Souris, Manitoba, Penhold and Calgary, Alberta, from whence he hitchhiked to Bismark, North Dakota, Banff, Red Deer and Vancouver. Perhaps you did better in uniform because my first western trip to Heron Lake in southern Minnesota, while I was doing research with Charles H. Best at Rochester, was not too smooth. We both belonged to the Intermediate Naturalists, along with Jim Baillie's daughter, Florence, and Bob Bateman.

We both experienced similar embarrassments. While Bruce's mother unknowingly admonished Professor Dick Saunders not to get snow on her floor when he came into the house to telephone, after Bruce had shown him a Bohemian Waxwing, the "twitch" that followed Dick (Jim Baillie was away) to see my Varied Thrush at Maple in 1961 upset my neighbour by telling him not to come out of his own house for fear he would frighten the bird! Jim Baillie obligingly eliminated the cause of the disturbance a few days later.

Bruce recounts his embarrassment when leading a birding group in Toronto in place of Dick Saunders, when he could not identify a loud warbler song that turned out to emanate from a Connecticut. "Professor Saunders would have

known what it was", they said. I will never forget falling off a log into four feet of muck when birding with Bruce and Ann, John Speakman, Mary, and Ron Ridout in La Selva in Costa Rica in 1989. It took me half an hour before I could see through my binoculars again.

We both worked at summer jobs for the Department of Planning and Development under Ken Mayall and Fred Ide, doing stream surveys, in Bruce's case with Andy Lawrie in the Thames and South Nation drainages, as well as nearer Toronto, and in mine also in the South Nation as well as in the James Bay watershed. The highlight of the latter summer was Kesagami Lake and River, now a provincial park.

In 1947, Bruce's summer work took him to the Wildlife Research Station at Lake Sasajewun in Algonquin Park with David Fowle and Jim Bendell. With Norm Martin, he worked under Professor Dymond in the Park Naturalist Program. Bruce stayed with the Wildlife Station, working with such people as Yorke Edwards, Cliff Hope and Doug Miller, for the rest of his academic career, eventually serving as U of T Department of Zoology representative.

We were both influenced by the same people, in Bruce's case, molding his career. "Covers" (A. F. Coventry) provided advice and support. E. M. Walker brought him into dragonflies, Dymond into fish. It is hard to forget J. R.'s mnemonic for the song of the White-crowned



Sparrow: "poor Jo Jo peed his pants".

Whereas Bruce became a major part of the Wildlife Station, I had a briefer but fruitful time at the Fish Lab, now the Harkness Laboratory of Fisheries Research on Lake Opeongo in Algonquin Park, that introduced me to Jack Price and Jake (now Senator) Kenny of Trinidad, as well as Murray Speirs, Professor A. G. Huntsman, and of course, Professor Harkness, Fred Fry and Ray Langford. Jack and Jake led me to my first exotic trips to Florida and the Everglades in 1945, and Trinidad in 1952, very different places in those days to what they are now. Both Bruce and I were influenced by Bill Gunn, this leading to Bruce's recognition as an international figure in animal communication and behaviour, with the first publication in 1959, and especially his interest in bird song. He went on to work out the anatomy and physiology of bird song as well, using Great Tits, meadowlarks, and of course, White-throated Sparrows, as subjects.

Both of us love the wilderness, Bruce with his Apsley property in Peterborough County, and we with our tract of Lake Huron shoreline, alvar and pseudoboreal forest on Manitoulin Island. But whereas we had our neighbour Ivan Bailey reconstruct two pioneer log houses on the site, Bruce built his own 19th century Ontario Victorian home at Apsley with his own two hands. He also built his own cottage on Go

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Home Lake. Anyone who tires of the summer crowding of Georgian Bay should let Bruce take them on a naturalist's tour away from the madding crowd to see such wonders as the botany of the old Champlain Sea.

Bruce was a member of the committee that established the Nature Conservancy of Canada, was NCC Chair from 1971 to 1974, and has remained a major figure in that organization, on which I also served as a Board member. We both served in the Conservation Council of Ontario, and we both had Long Point connections. Bruce was President of the Federation of Ontario Naturalists from 1962 to 1964.

With Don Smith and Witek Klawe in 1950 and 1951, Bruce camped out near the lighthouse at the tip of Long Point to begin his long career studying deer mice, at that time for his Ph.D. thesis. There they met Lorne Brown, the naturalist lightkeeper, who in 1948 gave me a lighthouse-killed Kentucky Warbler skin he had prepared. Jim Baillie said it was Ontario's seventh record.

Both of us became involved with the Long Point Bird Observatory. Bruce was already an Honourary Director, since 1970, and chaired the Program Committee from 1991 to 1992. Both of us served as Chairman of the Board. Bruce played a major role in the conversion of the former Long Point Bird Observatory to its national and even more scientific successor, Bird Studies Canada.

Obviously, his post-doctorate fellowship at Oxford, 1953–1954, and

his Visiting Scientist appointments in 1964 at CSIRO in Canberra, Australia, as well as in 1973 at UBC, Visiting Scientist appointment at Rockefeller University in 1980 and Visiting Fellowship at Wolfson College Oxford, 1981 and 1988, sculpted his professional career. But they also contributed to his birding abilities. He was as much at home in Europe when Mary and I visited him there as he would be at Long Point, finding Curlew Sandpipers, as I recall, and easily distinguishing, to me apparently identical, migrant *Phylloscopus* warblers.

He is ingenious in the field, as demonstrated during an early Birdathon to raise money for the Long Point Bird Observatory. We began to get inundated with rain, and with no alternative to start over on another day, Bruce fashioned a green garbage bag rain cape for each of us, carefully cutting out the eye and mouth holes, allowing us to continue counting!

In addition to our Costa Rica trip mentioned above in 1989, we had great trips together to Venezuela in 1993, India in 1996 and Brazil in 1997. Many of you will have seen his beautifully edited video, for example, of our trip to Kazaranga in Assam, particularly elephant rides through marshes to closely approach fighting Asiatic one horn rhinoceros.

But Bruce will be immortalized by especially his work on White-throated Sparrow morphs, Eastern and Western meadowlark song, and

of course, deer mice.

However, more important is his influence on younger scientists. Just as Baillie, Mayall, Dymond, Walker, Ide, Coventry and others left their impressions on him, he has left his mark on 36 graduate students in the field, as Bruce succinctly puts it, of “behavioural mechanisms contributing to population regulation, dispersion and use of resources by wild species”. His work continues, with 15 publications currently in preparation or press in the past five years.

He has been honoured previously many times, in Canada, the USA, UK, and Germany in particular, and in addition to important posts already mentioned, he was associate editor of the Canadian

Journal of Zoology from 1982 to 1989, Chair to the Scientific Program Committee of the 19th International Ornithological Congress in Ottawa, and involved in others before and after (good chances to do exotic birding!), and President of the Society of Canadian Ornithologists, 1991 to 1993. Bruce is a member of the Laboratory of Ornithology at Cornell, the Ecological Society of America, and the Wilson Ornithological Society (Council member 1962–1964), and a Fellow of the American Ornithologists’ Union and the Deutsche Ornithologen Gesellschaft. And now, OFO has most appropriately presented him with its Distinguished Ornithologist Award.

Ron Tasker, 12 Cluny Drive, Toronto, Ontario M4W 2P7

The Distinguished Ornithologist Award is granted to individuals who have made outstanding and authoritative contributions to the scientific study of birds in Ontario and Canada, who have been a resource to OFO and the Ontario birding community, and whose research on birds has resulted in many publications and a significant increase in new knowledge. Previous recipients were the late Earl Godfrey (1997), Ross James (1998), the late Murray Speirs (2000), and George Peck (2001).

## American Crow Nesting on Building

Mark K. Peck

On 2 April 2002, an American Crow (*Corvus brachyrhynchos*) was observed carrying several sticks to an interior corner of an upper ledge on the northwest side of the Royal Ontario Museum (ROM), Toronto, Toronto. The ledge was 21 m above ground and 3 m from the roof of the Museum. During the next 30 minutes, a pair of crows made three visits to the site. Sticks were seen being collected on the ground or taken from trees within 100 m of the nest. The birds then flew to a large Northern Catalpa (*Catalpa speciosa*) located in front of the ledge, before proceeding to the nest site (ONRS 168785). Although difficult to see from the ground, the amount of material on the ledge suggested that nest-building had been initiated a day or two earlier.

Nest-building continued on 3 (Ron Pittaway, pers. comm.), 4 and 5 April 2002. On 9 April, an adult was seen sitting on the nest. On 12 April, a crow was seen near the nest, calling loudly and flying at a Grey Squirrel (*Sciurus carolinensis*) as it moved along the upper branches of the catalpa. The crow continued to follow the squirrel until it had moved into a nearby tree. The bird then returned to the nest. The nest appeared intact and the ground below the nest contained numerous

twigs and some dried grasses. On 15 April, no activity was observed at or near the nest. The nest appeared damaged and the ground below the nest contained additional twigs, grasses and the broken remains of three crow eggs. The area was rechecked on 17 April, and no activity was seen at the nest site or in the surrounding vicinity.

On 17 April, a pair of American Crows was observed carrying twigs and trying to place them in various locations on the rooftop along the south side of the Legislative Building at nearby Queen's Park. The birds tried to place the twigs in several locations but, after approximately 20 minutes, flew off to the southeast. On 19 April, a nest under construction (ONRS 168790) was located in a nearby White Pine (*Pinus strobus*). Large young were seen in this nest on 16 June 2002.

### Discussion

The American Crow is a common summer resident throughout most of Ontario. It has been found breeding in a wide variety of habitats including woodland, agricultural and residential areas. Nests are usually well hidden in coniferous and deciduous trees and occasionally in bushes. But crows have also shown some versatility in nest site

selection. Within the province, Peck and James (1987) reported crows nesting rarely in dead trees, on top of dead stubs, and in a cliff face crevice. Throughout North America, there have been reports of birds nesting on the ground (Mitchell 1915), in tules over water, in hollow stubs, on telephone poles and even on the chimneys of an abandoned house and a church (Bent 1946). Many of the unusual nest sites mentioned by Bent were found on the prairies where the treeless landscape might have been responsible for some of the nest sites selected. A more extensive literature search failed to reveal additional nests sites on buildings. A search of the internet, however, turned up photographs of an American Crow nest positioned on a wooden ledge along one of the lower lock gates of the upper lock at Jones Falls, *Leeds and Grenville*, Ontario (Watson 2000).

While it is not surprising to think of American Crows and other corvids nesting in close association with people, it is rare to find them nesting on buildings. It has been reported for White-necked Raven (*C. cryptoleucos*; Baicich and Harrison 1997), and there was also a nesting attempt of a Common Raven (*Corvus corax*) x American Crow pairing on the former Etobicoke Lakeshore Psychiatric Hospital, Toronto (Jefferson 1994). Nests that

have been found are usually in abandoned buildings, where less human disturbance would be expected. The nest on the ROM was certainly high enough to avoid disturbance from humans but may have failed for other reasons. Squirrels are very common in the vicinity of the Museum and they are often seen using the ledges and walls to move around the area. A nest blocking a well-used route may have been disturbed to re-open a path. Another possible explanation for the nest failure may have been the difficulty securing the nest to the building. The nest was built on an interior corner of a flat ledge, and although well protected from the south and east, it would still be open to winds from the northwest.

Nesting on buildings might provide advantages for crows. To a corvid, the ledge on a building may be akin to a crevice in a cliff, offering protection from both predators and the weather. It may also be more advantageous in areas where deciduous trees predominate, and where birds initiate nest construction before the leaves have budded in the spring.

### **Acknowledgements**

Many thanks to Ron Pittaway for his independent corroboration of the nest and his follow-up report.

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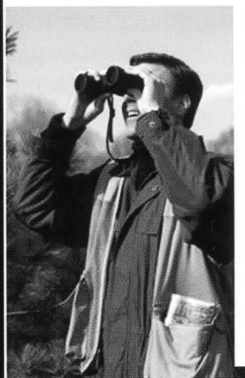
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