

A LATE SUMMER NEST OF THE RED CROSSBILL IN COLORADO

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IN COLORADO, the Red Crossbill (*Loxia curvirostra*) usually breeds early in the year. Griscom (1937: 151) states that the breeding season of *L. c. bentli* in Colorado is "...chiefly from late February to April." (All breeding Red Crossbills from Colorado which Griscom examined belonged to this subspecies.) Gale (*vide* Niedrach and Rockwell, 1939: 156) stated: "Nesting begins



Female Red Crossbill on nest in lodgepole pine. Photographed August 2, 1947, near Ward, Boulder County, Colorado, by Gordon Alexander. Foliage at lower right retouched by George M. Sutton.

at the end of March or beginning of April (1886), with grown young by May 21." Breninger (1894: 100) and Morrison (1888: 73) reported the species' breeding in Colorado still earlier in the year. Breninger collected a young bird recently out of the nest on January 5, 1893.

Late summer breeding of *Loxia curvirostra* has been recorded for a number of states, and a juvenile female was collected in September, 1874, in extreme southern Colorado (Archuleta County) by C. E. Aiken (Henshaw, 1875); but there appear to be no definite records of late summer nests for the state.

The following observations were made while we were students at the University of Colorado. We wish to thank Dr. Gordon Alexander for permitting us to use the accompanying photograph.

On July 26, 1947, while censusing the breeding birds of a forest of lodgepole pine (*Pinus contorta*) near Science Lodge, University of Colorado Mountain Laboratory (9500 feet elevation), we saw a female Red Crossbill carrying a piece of nesting material to her partly completed nest 18 feet up in a 20-foot lodgepole pine. When we returned to the nest on July 29, it was completed and contained one egg, but there was no sign of either the male or the female. Apparently incubation did not begin with the laying of the first egg. In a spring nest in Ontario, Ross and Ross (1950) found evidence that incubation did begin with the first egg. On the afternoon of July 30, however, the female was observed on the nest at 4:30 p.m. and again at 7:00 p.m. Incubation probably had begun. We did not ascertain how many eggs were in the nest for fear of alarming the female. During the next few days we visited the nest several times, finding the female incubating each time.

On August 7, we observed the nest continuously from 4:30 a.m. (sunrise, 5:04) until 7:30 p.m. (sunset, 7:07). Except for six brief periods totalling 26 minutes (Table 1), the female was on the nest throughout these 15 hours. Lawrence (1949) reported similarly long attentive periods for the Red Crossbill in Ontario.

Since there appears to be relatively little information available concerning the nesting behavior of the Red Crossbill in America, a detailed account of the

TABLE 1
ACTIVITIES OF FEMALE RED CROSSBILL ON NINTH DAY OF INCUBATION

	On Nest	Off Nest	Fed by Male
4:30 a.m.-8:16 a.m.....	3 hrs. 46 min.		7:06 a.m.
8:16 a.m.-8:19 a.m.....		3 min.	
8:19 a.m.....	a few seconds		8:19 a.m.
8:19 a.m.-8:22 a.m.....		3 min.	
8:22 a.m.-9:09 a.m.....	47 min.		
9:09 a.m.-9:10 a.m.....		1 min.	
9:10 a.m.-10:08 a.m.....	58 min.		
10:08 a.m.-10:09 a.m.....		1 min.	
10:09 a.m.-3:18 p.m.....	5 hrs. 9 min.		12:16 p.m.
3:18 p.m.-3:23 p.m.....		5 min.	
3:23 p.m.-4:51 p.m.....	1 hr. 28 min.		
4:51 p.m.-5:04 p.m.....		13 min.	
5:04 p.m.-7:30 p.m.....	2 hrs. 26 min.		
Total.....	14 hrs. 34 min.	26 min.	

activities on August 7 is in order. From 4:30 to 7:00 a.m. the female stirred only occasionally and did not defecate, preen, or stretch. At 7:06 the male came with food. The female chirped loudly, lifted her head, and opened her mouth. After feeding his mate the male flew to a pine close by, where he chirped briefly. At 8:16 the female departed, perhaps responding to the call of her mate (we heard a crossbill in the distance). In about three minutes both returned to the nest tree. The female quickly went to the nest where, a few seconds later, the male fed her. The pair then left again, flying off together. After three minutes the female returned to the top of a nearby tree and then quickly went to the nest. Presently she exchanged calls with a crossbill we did not see. At 9:09 the female climbed out of the nest, perched briefly on a branch close by, then went back to the nest. At 9:57 she again exchanged calls with a bird we did not see. At 10:07 the male appeared, perched 25 feet away for a moment, then flew to within three feet. The pair then left the nest, flying in different directions. At 10:09 both returned, the female to the nest, the male first to the top of the nest-tree, then to a nearby tree. After several minutes of exchanging chatter with his mate, the male flew away. At 12:16 the female called and the male returned, chirping, fed the female, and flew off. At 3:18 the male reappeared, calling. The female answered and left the nest, followed shortly by the male. At 3:23 both birds returned, the female directly to the nest, the male, chattering, to a tree 25 feet away. At 3:25 he ceased calling, fed for about fifteen minutes, and then left the immediate area. At 4:51 he returned, calling, and alighted in a treetop 20 feet from the nest. The female answered and left the nest. The male then flew off, again in a direction different from hers. At 5:04 both birds returned, the female flying from tree to tree before going to the nest, the male perching in a treetop and chattering quietly. At 5:12 the male flew off. At 5:40, coincident with the falling of a little rain, the female exchanged chatter with a crossbill we did not see. At 5:45 a few more drops fell, and again the chattering commenced. The rain and wind continued intermittently until dark (7:30), during which period the female remained on the nest, and we saw no sign of the male. Table 1 summarizes these activities at the nest on August 7.

On August 11 the incubation period, presumably 12 to 14 days (Forbush, 1929: 15), should have been almost over; the female, however, was not on the nest. We climbed to the nest and found three eggs in it. The eggs were still intact when we returned on August 14, but we saw neither the male nor female. On August 22, we collected the nest and eggs, finding that each of the eggs contained an embryo almost ready to hatch. The nest apparently had been deserted near the end of the incubation period.

The eggs were very pale greenish gray, characteristically marked with a few chocolate-brown spots and scrawls at the larger end. We damaged the eggs while collecting them. The least damaged one measured 20.6 x 16.3 mm.

The foundation of the nest was of twigs of conifers. The superstructure was of fibrous material stripped from plant stems, a few grass blades, several pieces of herbaceous plant stems, a small tuft of hair, and a fascicle of pine needles (*Pinus flexilis*). The lining was of shredded bark, lichens, and fine hair (no feathers so far as we could see). The nest measured (after collection) 107-123 mm. in over-all diameter, 52 mm. in over-all depth. The cup proper was 60 mm. wide and 27 mm. deep.

SUMMARY

A late summer Red Crossbill nest in Colorado was 18 feet from the ground in a 20-foot lodgepole pine. It was started on or about July 26. The first egg was laid on or about July 29. The total clutch consisted of three eggs.

Incubation did not begin with the laying of the first egg but may have begun with the laying of the second.

On August 7 (about the ninth day of incubation), the female was on the nest continuously for 15 daylight hours except for six brief periods totalling 26 minutes. While on the nest that day she was fed three times by the male.

The nest was deserted on or about August 11. The eggs were almost ready to hatch at that time.

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