

BREEDING BETWEEN CLAY-COLORED AND CHIPPING SPARROWS IN A SYRACUSE, NEW YORK CEMETERY

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On the morning of 21 May, 2019, I began an exciting summer-long journey, bearing witness to the nesting of a female Chipping Sparrow (*Spizella passerina*) paired with a male Clay-colored Sparrow (*S. pallida*). This was a special opportunity to study and document the full process including territory establishment, courtship, nesting, and raising of the offspring. Would they be successful?

It all started serendipitously during a regular visit to Oakwood Cemetery when I heard a Clay-colored Sparrow singing its usual buzzy song, a first for me at the site and scarce generally in New York. Oakwood is an old (c.1859), large (160 acre), hilly, urban cemetery in Syracuse, NY. Habitat is typical of old cemeteries in the area, with many large trees, grassy lawns, and patches of scattered scrubby vegetation. It is mowed, but not too often, and is never fertilized, nor are herbicides or pesticides used on the property. I was excited to get a new (and unusual) bird for my local patch and went back in the evening to see if it was still there. It was, and it was still singing. This time, however, it was doing an alternate buzzy song comprised of different tones ending on an impossibly low note that seemed incredible coming from such a small bird. Consulting the Sibley app on my mobile device, I was surprised to discover the song was not included there. As the story continued to unfold, it turned out that wasn't the only special thing happening. I spent the next two months observing, making detailed field notes and sketches, and documenting the bird with audio recordings and photography.

During the first few days following discovery I located the Clay-colored in four adjacent sections of the cemetery, covering about six acres. But after the first week or so, all activity was confined to one area. It had chosen a territory! Would it find a mate? The Clay-colored Sparrow advertised its presence by singing from eight different boundary trees—maple, beech, oak, tulip, ash, spruce, and balsam fir—defining an area of roughly .6 acres. Its favorite perch was a bare branch 20' up the 65' high by 45' diameter Norway spruce but soon came to sing from interior evergreen bushes and monuments as well, often just after leaving the nest bush. The spruce however was always the go-to spot.

As June arrived, I realized migration was likely over and another Clay-colored had not found the first. Upstate NY is at the eastern edge of the species' range and the species is thinly distributed even in good habitat. Wondering how long the bird would stay, things suddenly got very exciting when on 5 June it was seen feeding a female Chipping Sparrow and presenting it with tiny sticks. Courtship! It had found a mate. The Clay-colored continued singing and

vigorously chased other Chipping Sparrows from the territory. On 9 June I confirmed nest building in the upper third of a 5' 6" high by 36" wide evergreen bush, both birds entering and leaving the spot frequently and sometimes together. This is somewhat lower than Chipping Sparrow nests I've seen in the past, but it is higher than what might have been chosen by a female Clay-colored, which average only 10-12" from the ground (Grant and Knapton 2012).



Male Clay-colored Sparrow singing from his favorite perch (© Deborah Dohne, 2020).

The area near the nest site is one of the busier areas of the cemetery, with both car and pedestrian traffic during the day. My routine was to alter days where I would conduct brief 'check-in' visits with longer observations. For these I would sit low to the ground, always in the same position under a distant tree. It seemed both birds were used to my presence, recognized me (and my dog), and carried on with their activities while we were there. However, if other people came close the birds would stop all activity, freeze, hide, or go high up in nearby trees. The nest was placed in a well-concealed thick cluster of needles on the outer extremity of the shrub. By mid June food-carrying and intense activity at the site confirmed that the eggs had hatched and young were being fed. Suddenly a second Chipping Sparrow was seen carrying food to the nest—a helper. Research confirmed that cooperative breeding has been observed in the species (Middleton and Prescott 1989), with other Chippies sometimes pitching in with parental tasks, possibly family members, unpaired birds, or failed nesters. It is also possible that the second Chipping Sparrow was a rival

male and that its investment reflected some possibility that one or more of the offspring were its own, as was suspected in a somewhat similar scenario involving Cerulean Warblers and a Northern Parula in Suffolk County in 1994 (Lindsay and Vezo 1995). Cooperative behavior has not been reported for Clay-colored (Grant and Knapton 2012), and indeed the Clay-colored Sparrow often chased the helper Chipping, which was always hyper-alert and had its crown raised. It would land on a nearby monument, hop all compass points, and make a mad dash for the nest to deliver food before the Clay-colored could intercept. Sometimes the helper would have a fat caterpillar hanging out of its bill as it flew in circles trying to evade the Clay-colored. In this battle of biology the helper persevered, often getting through to feed the young.

Density of the nest tree prevented me from seeing the young branch out, but finally on 29 June the first bird fledged. It was found that morning having flown some distance on its own, being fed by the Clay-colored Sparrow as the female Chipping and helper tended to the remaining birds still in and near the nest, soon to make their own first flights. Over the next two days, the remaining two hybrid offspring would fledge. The last bird remained unsure of itself and remained close to the nest tree, attended to by the mother Chipping. The Clay-colored and helper Chippie fed the more adventurous, farther-flying young birds. The mother Chipping remained close to the nest and I wondered if perhaps a fourth young might be present, but it was never seen and I did not look in the nest while it was occupied. The fledglings made longer and more frequent flights, always becoming very animated before being fed, rarely together in the same spot. They continued being fed in trees exclusively for the first nine days, then often on the ground.

The eBird database contains only about a dozen records accepted as hybrids, mostly single birds seen as adults during migration, all but three from the eastern edge of the Clay-colored Sparrow range. It is difficult to assess how frequently pair-bonding behavior occurs between these closely related species, but such pairs appear to be very rare. In New York State, a male Clay-colored Sparrow paired with a female Chipping Sparrow in Columbia County in 1983 and 1984 (Novak 1988). In that case a nest but no eggs or young were observed the first year, but a nest with young was observed in 1984. Thus, the present report is one of only two where actual breeding was observed, and the first in which fledged offspring were observed contemporaneously with the parents. Although the juvenile plumages of these two closely related species are so similar that specific hybrid traits were not discernible in the newly fledged young, a molting immature seen in the cemetery 6 September clearly showed plumage characteristics of both parent species. It is overwhelmingly likely that this hybrid immature was one of the offspring from the hybrid pairing described in this article.



Male Clay-colored Sparrow feeding ten-day old offspring (© Deborah Dohne, 2020).

My last encounter with the Clay-colored Sparrow and its family came on 19 July when mowing in the area commenced. The bird sang from its favorite perches before the group wandered off to a quieter area, the young still dependent on their parents for food. If not for the disturbance, would they have attempted a second brood? In August, when I was positive that activity at the nesting spot was done for the year, I located the exact position of the nest and observed its construction. I was surprised by how difficult it was to find given the small size of the bush, but after spreading the needled branches apart I came upon it—the birds' sweet nest home. Well-concealed and fully intact, the small, well-supported nest was protected from rain and constructed of finely woven materials. There were no remains or shells but only the hard parts of several beetles. Late summer was spent searching for the Clay-colored Sparrow and hybrid offspring but was hindered by poor sightlines and tall grass in the large and hilly cemetery, the many sparrows there not yet flocking together and thus spread throughout in family groups. By September, large mixed-age Chipping Sparrow flocks formed and became conspicuous, and on the 6th I observed one of the hybrid offspring, now fully independent, busy going about the business of being a sparrow preparing for fall migration.

Reflecting on the experience, some questions arise. What will the fledglings look like as adults and will they return to the cemetery to nest? Was the helper bird a failed nester, some familial relation to or former mate of the mother perhaps, and had the mother been a helper once herself? Was the Clay-colored Sparrow a young bird making its first attempt at breeding? If not, had

it bred nearby previously and if so, was that also a hybrid pairing? And how would I spend summer 2020—will it return next year?



Chipping Sparrow helper with food showing typical raised crown seen before each attempt to get to nest (© Deborah Dohne, 2020).

TIMELINE AND HIGHLIGHTS OF FIELD NOTES

May 21: Clay-colored Sparrow (CCSP) arrives at Oakwood Cemetery, Syracuse, NY.

May 25: A singing Olive-sided Flycatcher is nearby as the sparrow continues advertising its presence. Recorded the two species singing at the same time, an unusual scenario. **May 31:** Day 10. Territorial boundaries are apparent and well defined by singing perches.

June 4: CCSP seen carrying food but unknown where it went.

June 5: Day 15 on territory. CCSP singing a little less, mainly alternate song. Observed courtship behavior with a female Chipping Sparrow!! (CHSP) First CCSP fed a caterpillar, then presented tiny sticks to the CHSP.

June 6: CCSP continues to sing main and alternate songs in defense of territory. Chipping Sparrows from adjacent areas chased from the clearly-bounded territory. Pays no attention to E. Kingbird, House Wren, Gray Catbird, Am. Robin, Mourning Dove,

and Baltimore Oriole nesting in the area. CHSP pairs nesting in three of the adjacent sections seem to have conceded the CCSP territory.

June 8: It's amazing how consistently-interpreted the territorial boundary is. CCSP continues to escort interlopers over the line. CCSP and CHSP mate forage together on the ground and stay in close proximity.

June 9: Day 19. Nest site confirmed! CCSP and CHSP entering/leaving nest site together, an evergreen shrub, thick and dense especially in the upper third, 5'6" H x 36" D. Birds never seen with nesting material. Where did it come from and how/when did they get it there? Birds enter bush away from nest then move toward it from within.

June 14: Day 24. I think there is a hatchling but won't disturb the birds to get a better look. Both parents in and out of the nest tree regularly, switching places. First observation of this behavior.

June 18: Entering/exiting from bottom of tree (nest closer to top). Constant activity – coming and going about every three minutes. Presume all the eggs have hatched. CCSP singing as time allows.

June 19: Day 29 on territory. Helper Chippie seen delivering food for the first time and being chased by CCSP. Hectic schedule for the adults – feeding young and themselves. Returned in evening. Both parents entering nest tree with food. Male singing a lot in between, lots of activity the whole visit. In and out every couple of minutes.

June 20: Defending territory even in pouring rain.

June 21: Female with big caterpillar flies around area, as previously, before entering to feed young.

June 22: Female CHSP removes fecal sac and drops in road 75' away. I still haven't heard the young, don't know if they are quiet or if I'm just too far away. Aggressive CHSP at boundary repeatedly ejected by CCSP dad.

June 24: Day 34, short visit. Both parents attending to nest activity.

June 25: CCSP with food and first time I've heard the nestlings. Visits every 1-2 minutes. CCSP chases away the helper Chippie which was carrying food! Helper repeatedly tries to reach nest but CCSP chases it – at one point both were flying with food. CCSP too busy to sing. Nestlings make begging call only when adults are near the nest, including the helper, but are quiet otherwise.

June 27: Activities continue even with mowing in the section. Helper Chippie continues trying to feed nestlings.

June 29: Day 39. FIRST FLEDGLING!! I've been waiting for this day! In tree, one of the closest to nest bush, medium size maple. Being fed by CCSP. Moved around a little on branches within tree.

June 30: Second bird fledges, still at least one in the nest. Being fed by helper Chippie and CCSP, the latter too busy to object. Mother CHSP still attending to young at the nest.

July 1: Likely three fledglings, but only two seen at once, being fed by CCSP and helper. CCSP finding time to sing alternate song.

July 2: Young widely separated, being fed by helper and CCSP.

July 4: Day 44. Two fledglings together in same tree now a fair distance from nest.

July 7: Fledglings seen flying between trees within territory! Pair of CHSP seen nest building right at the edge of territory.

July 9: Day 49. Finally get decent photos of immature hybrids, being fed by CCSP. Second day I've seen them on the ground, also flying around more. CCSP doing limited singing; regular and alternate song. CHSP in adjacent area seen feeding a Brown-headed Cowbird that was constantly begging.

July 11: CCSP goes back to chasing away the helper CHSP. 'Thanks but no thanks.' Day 12 since the first young left the nest. Short visit, left them alone, one young seen.

July 17: CCSP singing a lot, like before the eggs hatched, alternate song only. Thinking about a second brood?

July 19: Day 59. Singing alternate song. This turned out to be the last day I observed the CCSP and its family together near the nest site. Departure certainly hastened by mowing taking place today. CCSP was at this location May 21-July 19. Likely still around but could not find.

Late July/August: Many CHSP family flocks throughout the cemetery. Hybrid young not seen.

Sept. 6: Large flocks of CHSP now, as many as 30 birds together, few small groups. After looking for weeks I finally find one of the hybrids! Feathers have grown in, influence from both parents noticeable. Buffier overall and in face pattern than pure Chippies of the same age. It was to be my last sighting and the end of the journey, at least for this year.

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