

**Observations on the nesting of *Sporophila obscura* in association with wasps.**

—During the years 1962–1964, I studied the nesting of the Dull-colored Seedeater (*Sporophila obscura*) near Yuto, Province of Jujuy, Argentina. As the habits of this bird are little known, it seems desirable to report my observations in some detail.

Nesting begins at the end of October and is completed in March. The 61 nests in this study were found in a large plantation of orange and tangerine trees. Except for one nest in an acacia plant, all were built in the citrus trees. The nests are always made of the flowers of a grass, *Digitaria insularis*, or of other grasses with similar flowers. The fibers are woven rather compactly, and the nest weighs about 25 g. All the other 11 species of *Sporophila* in Argentina build tiny, transparent, cup-shaped nests woven of fine vegetable fibers and some horse hairs; these nests weigh about 2 g and are 60 mm in diameter and 45 mm in height. In contrast, the nest of *S. obscura* measures about 90 mm in diameter, 200 mm in height, and has a circular entrance 40 mm in diameter oriented toward the upper portion. The form is roughly ovoid, with the long axis vertical.

A clutch generally consists of four eggs, although some nests have three. One clutch of four eggs, which measured 18.1–19.0 × 13.0–13.5 mm, had a total weight of 7 g. The eggs are white with small spots of dark chocolate-brown over the entire surface and concentrated in a circle at the large end.

Early in this study I found several nests of *Sporophila obscura* near the nest of a wasp, *Polistes canadensis*. I then began to search near all nests of the seedeater for a wasp nest, and I found one in all but 3 of 61 cases. In only 3 cases was the wasp not *P. canadensis*, but an unidentified carnivorous species. Some of the wasp nests were difficult to find, being only 1 cm in diameter, but usually they were larger, up to about 25 cm.

Some of the bird's nests that were abandoned when I found them were adjacent to a wasp nest that was also empty. In one case when I collected the eggs of a bird, the bird deserted, and within a few days the wasps also abandoned their nest. In other cases when birds had just begun to build their nests, after a careful search I would find a small nest begun by one or two wasps. I could not ascertain which started to build first. I suspect that the bird seeks to build its nest near the wasp nest. This would account for the fact that all the bird nests I found were in cultivated areas, especially citrus fruit plantations, because the wasps seem to prefer these plants.

According to Fr. Haverschmidt (*J. f. Orn.*, 98: 389–396, 1957), other South American birds that also construct their nests near those of wasps are *Cacicus cela*, *Pachyramphus polychopterus*, and *Tolmomyias flaviventris*. Also in Africa (R. E. Moreau, *Ibis*, 84: 240–263, 1942) and in Australia (A. K. Hindwood, *Emu*, 55: 263–274, 1955; 59: 1–36, 1959) there are birds that build their nests near those of wasps or ants. Moreau speculated that the birds would be protected from mammalian predators because the mammals avoid the stinging insects; in return the birds do not seem to molest the ants or wasps. I do not know whether or not this explains the relationship between *Sporophila obscura* and *Polistes canadensis*. My notes on individual nests follow:

24 November 1962.—All nests found on this day were in an area of 30 square meters. Nest 1: 1.2 m from the ground, construction just begun on a wasp nest 25 cm away, three wasps present; I took the eggs from the bird nest; the bird deserted the nest and three days later the wasps also were gone. Nest 2: 1.5 m up, a well-advanced nest; two wasps working 15 cm away on a small, 1 cm nest. Nest 3: 1.6 m, 30 cm away two wasps working on a nest with 17 cells. Nest 4: 1.5 m, 15 cm away a nest with seven wasps; two months later both nests abandoned. Nest 5: 2.5 m, six wasps at a nest at the base of the third nest. Nest 6: 1.7 m, 30 cm away a nest with two wasps present.

5 December 1962.—Nest 7: 1.4 m, a bird nest that was damaged and abandoned; 10 cm away a wasp nest with 10 cells, also empty. Nests 8 and 9: 3 m, 40 cm apart, 5 cm from one was a wasp nest, 7 cm in diameter, with wasps present.

7 December 1962.—Nest 10: 1.6 m, the nest not finished, no wasp nest found. Nest 11: 1.6 m (on 19 January 1963, three large young in this nest), a wasp nest and two wasps 25 cm away.

9 December 1962.—Nest 12: 2 m, no eggs, 5 cm away one wasp present at a small nest.

13 December 1962.—Nest 13: 2.5 m, a nest with three eggs, a small, wasp nest 40 cm away. Nest 14: 3 m, at 80 cm a large nest of the carnivorous species of wasp.

20 December 1962.—Nest 15: 1.9 m, nest just begun, 7 cm distant a small wasp nest with 20 cells. Nest 16: 1.3 m, nest almost finished, 95 cm away was a nest with two wasps and 18 cells. Nest 17: 1.5 m, 25 cm from the bird nest was a wasp nest with 18 cells and three wasps nearby; 1.5 m above the wasp nest was an abandoned bird nest.

4 January 1963.—Nest 18: 1.6 m, nest abandoned, 30 cm away a small, wasp nest also empty. Nest 19: 2.5 m, 100 cm from the bird nest was a wasp nest, 8 cm in diameter, with six wasps present. Nest 20: 1.5 m, an abandoned bird nest and 130 cm away an abandoned wasp nest.

6 January 1963.—Nest 21: 2.5 m, a wasp nest with three wasps, 10 cm from the bird nest. Nests 22 and 23: 2.3 m, 30 cm apart; 1.3 m below was a third, abandoned nest; a wasp nest exactly between the two active bird nests with 10 wasps present.

19 January 1963.—Nest 24: 1.6 m, only 40 cm away from nest 11, which had young; a very large, wasp nest only 25 cm away; the bird's nest had one egg, on 26 January it had four eggs, and on 9 February three young with feathers were present. Nest 25: 1.3 m, nest empty, almost totally destroyed by rain, an active wasp nest 15 cm away.

9 February 1963.—Nest 26: 3 m, one egg present, no wasp nest found. Nests 27–30: 2 m, surrounding a wasp nest, the latter being 13 cm in diameter, with 15 cells; two of the bird nests were 30 cm and two (one with two eggs) 150 cm from the wasp nest. Nest 31: 3 m, in an acacia, a nest of the carnivorous wasp at 80 cm. Nest 32: 2.5 m, a wasp nest, 10 cm in diameter, with 11 wasps, 30 cm away.

17 February 1963.—Nest 33: 2.5 m, 120 cm away a wasp nest, 12 cm in diameter, with 28 wasps present. Nest 34: 1 m, at 50 cm a nest of the carnivorous species of wasp.

28 October 1963.—Nest 35: 2.3 m, 30 cm from this, the first seedeater nest of the season, one wasp was working on a nest with 28 cells; on 4 December the bird's nest had not been finished and the wasp had ceased working.

4 December 1963.—Nest 36: 1.8 m, completed but no eggs present, at 60 cm a wasp nest, 4 cm in diameter, with three wasps working. Nest 37: 1.8 m, 20 cm below the nest was a wasp nest, 5 cm in diameter, with two wasps present.

8 December 1963.—Nest 38: 1.4 m, 20 cm away a wasp nest, 5 cm in diameter, with three wasps; I removed the bird's nest with its one egg but several weeks later the wasps were still working. Nest 39: 1.4 m, 20 m from nest 38, nest finished but no eggs, at 15 cm an active wasp nest.

11 January 1964.—Nest 40: 2.2 m, no eggs present, at 10 cm a wasp nest, 5 cm in diameter, with five wasps working. Nest 41: 2.2 m, no eggs, 50 cm away two wasps working on a nest 5 cm in diameter. Nest 42: 3 m, no eggs present, no wasp nest found. Nest 43: 2 m, being constructed, 40 cm away two wasps working on a nest 4 cm in diameter. Nest 44: 2.2 m, a wasp nest practically attached to the base of the bird nest, four or five wasps working.

22 January 1964.—Nest 45: 2 m, a wasp nest 25 cm distant.

24 February 1964.—Nest 46: 1 m, 30 cm away a wasp nest, 15 cm in diameter, with 18 wasps working. Nest 47: 2.2 m, 20 wasps working on a wasp nest, 15 cm in diameter, 20 cm from bird nest.

8 March 1964.—Practically all of the seedeaters had finished nesting and were no longer singing. I collected one immature specimen. A dozen nests examined had young and eggs of *Sicalis flaveola*, which very often uses abandoned nests of *Sporophila obscura*. Nest 48: 2.2 m, 30 cm away a wasp nest, 15 cm in diameter, with 30 wasps. Nests 49–50: 2 m, one with three young, 30 and 50 cm away from a wasp nest, 10 cm in diameter, where 20 wasps were working. Nest 51: abandoned, 15 cm away a wasp nest, 20 cm in diameter, also vacant. Nest 52: 1.5 m, abandoned, 30 cm distant an empty wasp nest, 20 cm in diameter. Nest 53: 2.5 m, three wasp nests, one 15 cm away and 5 cm in diameter, with eight wasps present, the other two very large with many wasps, at 100 and 180 cm from bird nest. Nest 54: 1.3 m, two young birds and one egg, 120 cm away a wasp nest, 20 cm in diameter, with 50 wasps present. Nest 55: 1.3 m, 10 cm away a nest with 20 wasps. Nest 56: 2 m, 30 cm distant a nest with 30 wasps. Nest 57: 2.1 m, two eggs, 50 cm away a wasp nest with 18 wasps. Nest 58: 3 m, no eggs, an active wasp nest at 40 cm. Nests 59–60: 2.5 m, 50 cm apart, a wasp nest 30 cm from one. Nest 61: 2 m, three eggs of *Sicalis flaveola*, an active wasp nest at 35 cm.

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