

## NESTING OF THE BLUE-BLACK GRASSQUIT IN PANAMA

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Throughout the rainy season, from about April to December, in central Panamá and the Canal Zone, the Blue-black Grassquits (*Volatinia jacarina*) are a common sight as they feed on the seeds of the tall roadside grasses or in open lowlands. Notes on their nesting were made chiefly at the edge of the townsite of Pedro Miguel in the Canal Zone, on a hillside beside a second-growth jungle and at an elevation of about one hundred feet, seven miles inland from the Pacific end of the Panama Canal. Additional notes were made at an elevation of 30 to 50 feet on the western side of Ancon Hill, Balboa, Canal Zone, near the Pacific end of the canal, and beside it, at Gamboa, sixteen miles inland.

*Nest 1.*—On August 13, 1952, a male *Volatinia* was seen furtively gathering nesting material in the fern row below the front entrance of the writer's home at Pedro Miguel. One week later, on August 21, the nest was discovered about five and one-half feet above the ground in a *Codiaeum* bush (*C. variegatum*, commonly called croton), which was part of a short hedge shaded by an overhanging mango tree west of the house. The nest was a three-inch, unlined, open cup, formed of dried fern midribs. Although it seemed too frail to support eggs or young, the female was found sitting on it on August 22. The male was first seen to "dance" on the following day. In this characteristic performance he springs straight up from his perch, while uttering a sharp, upward inflected *tsee-ee-eeep!*, executes a flipping turn at a height which varies from a few inches to two or three feet, and drops back again to his original post. This action is repeated at varying intervals and for longer or shorter periods of time. On August 25, two blue eggs, streaked with dusky were noted. These were taken from the nest, presumably by an unidentified night prowler, on August 29.

*Nest 2.*—On September 3, 1952, five days later, it was discovered that the pair of *Volatinias* had torn apart their first nest and moved all but a few shreds of it to a gardenia shrub in the more open yard. The new site was only four feet above the ground and about ten yards distant from the first site. Late in the day, at 6:05 p.m., the pair visited a new feeding tray established for their benefit. On September 5 the male stationed himself on a branch of frangipani (*Plumeria acutifolia*) about 15 feet from the nest and repeated his dance. The hurried and incomplete notes of that year do not record visits to the nest on September 4 and 5, but they do record three eggs in the nest at 4:00 p.m. on September 6. On September 11, there was a noticeable increase in the excitement of the male as he continued the jumping flights at 5- to 6-second intervals throughout much of the day. On the afternoon of September 16, the male was seen sitting on the nest while the female ate at the seedtray. In a few minutes she returned to the nest and the male went back to his post on the bare frangipani branch to resume the dancing. As I did not examine the nest then, or on the two following days, it is quite possible that at least one of the eggs had already hatched. I finally ventured to look on September 18 and found three black-skinned nestlings. This incubation period probably was about twelve days. The male bird now ceased his flights and devoted himself to feeding the young. By September 25, at 8:00 a.m., the young completely filled the nest and were fairly well-fledged. When visited at 4:30 p.m. on the same day, the nest was empty. The young could not be found in the vicinity. If they had not been destroyed by an enemy, they must have left the nest after a nestling period of only seven to nine days. The parent birds appeared in the frangipani over my head on a branch, where the male jumped again a few times, on September 27 and 28. The female came once more to the feeder, and then the pair temporarily disappeared from the yard.

Although males of the species were seen at slightly higher altitudes during October and November of that year, none came to the feeding station until the following January 17, 1953. One male reappeared on that day and another came on February 11 with a female or young bird and hid in the thick vine of *Thunbergia grandiflora* below the kitchen window where there was a bamboo trough containing commercial birdseed. On February 16, one with a prominent white wingspot arrived and all of these birds continued to accept our hospitality while molting. On March 15 a small flock fed on the lower lawn and in a new growth of tall grass beyond the drainage ditch west of the garden. On April 9, a male was seen to jump for a while at 4- to 6-second intervals and similar activity was reported on the following day from Balboa. This was the first jumping of the season which had been observed there.

*Nest 3.*—One week earlier in the month than in the previous year, on August 7, 1953, the Blue-black Grassquits returned. It was later reported to me that a pair had nested earlier near the house on the hill above us. They were first seen stripping fibres from the matting, trunk and tough midribs of the fronds of a young coconut palm beyond the garden. At 7:30 a.m. on August 11, the male, which had been lingering under the hedge, was seen to jump in the open space beyond it. Ten minutes later he was at the site of the unsuccessful nesting of 1952. A female sat nearby. On August 13, two male Blue-black Grassquits and the one female were seen in the garden. One of the males started to jump but the female chased it away. Next morning both males were dancing. One sat about five feet from the ground at the top of a makeshift ladder beneath a papaya tree. The other seemed to imitate his every move from the crown of a small papaya plant, at the same level. That day, August 14, 1953, a poorly assembled nest was found in the same shrub as that used in 1952, but this nest was placed about one foot higher. The structure seemed unfinished, so was not examined lest the birds desert it. We saw both males jumping on August 15 and 16, and found to our surprise, at midday of the latter day, that there were already three eggs in the loose cup-shaped nest. After that the older-appearing male danced alone until August 26, when two nestlings and one unhatched egg were found at noon. At 3:00 p.m. on August 26, the male bird came to the feeding tray and ravenously dipped into it more than 32 times before resuming his flights from the ladder. The female continued to brood and the male to jump until August 30. At noon I removed the unhatched egg and found it to be infertile. At 2:30 p.m. the male was seen approaching the nest with an inch-long green worm, and soon after the female arrived with food for the young. By September 1 the young were well grown and at 10:00 a.m. on September 4, 1953, about nine days after hatching, they were missing from the nest. When I looked into it, the parents came hopping from under the house. The male worked for a while at tearing the nest apart at 9:30 a.m. the next day. That afternoon he came, for the first time, to a feeding tray on the remote side of the house. At 6:00 p.m. the adults were seen gathering something in the grass and flying with it toward the brush. On September 8 at 8:15 a.m., two fluttering fledglings were brought by their mother to a tree above the tray and fed. Later this female drove away a male Variable Seedeater (*Sporophila aurita*) and led the young to the feeder itself. The male was seen sitting on "his" ladder for the last time at 1:30 p.m. that day. The pair was noted feeding under the hedge eleven days later. A lone male jumped in the garden on December 6 but both the Blue-black Grassquits and the Yellow-bellied Seedeaters (*Sporophila nigricollis*) seemed to have left the vicinity about September 25, 1953.

*Nest 4.*—The Volatinias returned to what was apparently their nesting territory from their haunts of the early part of the dry season as follows: On January 17, 1954, same date as in 1953, a pair was seen at the foot of the hillside drainage ditch; one black

individual appeared at the feeding tray at 7:30 a.m., on March 3, 1954; two others with a female were seen feeding in the garden. These birds were still in the process of molting and they hid in the vines, coming timidly before sunrise to the tray by the kitchen window, which had been frequented during their absence by a small flock of Variable Seed-eaters. One shy, rusty-feathered, young male grassquit fed on the seed which had fallen or been spilled on the ground. By May 18 his plumage was noticeably blacker, and by the last day of the month he was seen jumping. Ten days later, June 10, 1954, his nest was found in a rashly exposed situation at the top of a fish-tail fern (*Nephrolepis* sp.) about two feet above the ground. In it was one egg, half pale-blue and half white, streaked with dusky. The female had sat on it for only one day before it was found, punctured, on the ground. A pair of wrens, one pair of Variable Seed-eaters and at least two pairs of Yellow-bellied Seed-eaters had disputed the area with the newcomers. The male, an immature or first-year Blue-black Grassquit, may have been the one seen jumping in the garden a few days later, but that was the last known attempt of this species at nesting in the immediate vicinity of the house.

*Additional notes.*—In Balboa during May, 1955, a pair of Volatinias started coming to our feeding tray at the corner of the patio. The male jumped on June 12, but no nest was found. The pair both fed regularly and then more frequently, as though feeding young, for some time prior to August 6, 1955. On that date, the female brought young to a tall tree nearby and fed them. The frayed-looking male disappeared that day, and the female disappeared a few days later on August 11. A male was seen a few days later in the brush beside a ditch further up the hill.

On October 8, 1955, a nest was seen and photographed at the top of a bank behind the home of its finder, Mrs. W. M. Alderton, of Gamboa, Canal Zone. The usual scanty, cup-like nest was hidden in short, matted grasses which arched above it in a half-dome. There were three fledglings in it. Mrs. Alderton observed that the male jumped for eight days and both parents cautiously fed the young for nine days before the third young bird left the nest.

#### SUMMARY

The Blue-black Grassquit nested four times, within a period of three years, near a house in Pedro Miguel, Canal Zone. Nesting was observed in the months of June, August, September, and October.

The nest constructed by these birds is an unlined, open cup, about three inches in diameter, with only a few stiff fibres forming the bottom. One nest was found in the short grass, and others were noted from two to six and one-half feet above the ground. Nests were built in August of two consecutive years in almost the same spot. In one instance, after the young were destroyed, the nest was moved 10 yards to another site. The following year a successful nest on the original site was partly destroyed after use.

Two or three eggs are laid. These are pale blue in color and are streaked with dusky.

The male was once seen, near the end of the incubation period, replacing the female at the nest while she fed. The male assisted in feeding the nestlings. Nestling periods of nine days were noted twice.

*Balboa, Canal Zone, November 1, 1955.*