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TERRITORIAL BEHAVIOR OF THE BLUE-BLACK GRASSQUIT

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Although the Blue-black Grassquit (*Volatinia jacarina*) is a common species from northern Mexico to northern Argentina and Chile, it has been studied in some detail only in Panama (C. C. Alderton, *Condor* 65:154-162, 1963). In 1970 I had the opportunity to study the territorial behavior of this species at Finca Taboga near Cañas, Guanacaste Province, Costa Rica, where it occurred singly in openings at the forest edge or in dense groups in open areas. Because the territorial behavior of tropical birds is poorly known, the following observations may be of interest.

On 13 July I mist-netted and color-banded three adult male (all black), two "subadult" male (black mixed with

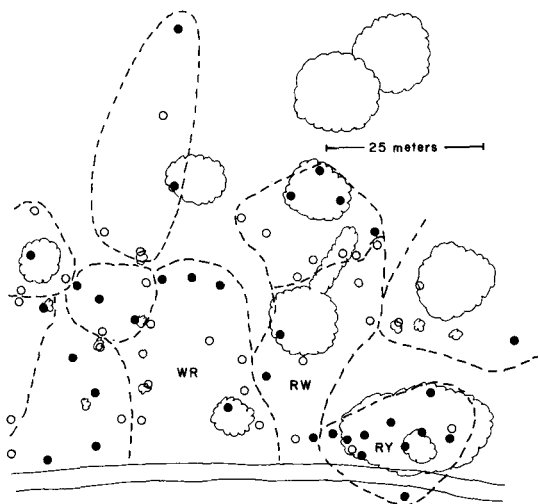


FIGURE 1. Map of territories of Blue-black Grassquits. The dashed lines indicate territorial boundaries as determined from positions of singing and displaying individuals (black circles) and other positions of the same birds (open circles). WR, RW, and RY are color-marked birds. The wiggly lines represent the crowns of individual trees.

brown; perhaps these were adults that had not completed their molt), and one female (all brown) grassquits. During the next three days I was able to watch the activities of the three all-black males, as well as several unmarked males and females. I mapped my study area (approximately 3,750 m² or 0.4 ha) by establishing a transect along a road and triangulating the major features of a field with scattered trees (Fig. 1). The three marked males maintained separate territories from which they chased intruders and within which they were the only individuals to sing and display. Hence, I assumed that other singing and displaying males, although unmarked, were territory holders. By plotting the activities and movements of these unmarked birds, their territories could also be mapped.

The area under observation supported 10 resident males (Fig. 1), none with mixed black and brown plumage. The smallest territory was about 1/3 the size of the largest. Only the resident male displayed within its territory, giving its short, buzzy song every 3.5 to 4.5 s for up to 5 min at a time, with or without its unique aerial display, that is, jumping into the air about a foot or so, exposing the white patches under the wings, and returning to its perch (Alderton 1963; P. Slud, *Bull. Am. Mus. Nat. Hist.* 128:1-430, 1964). Other males were often present but neither sang nor displayed and were almost immediately chased by the resident. From time to time a resident left his territory for several minutes, flying high over intervening territories to some point out of my sight.

The small territories and the conspicuousness of the distinctive vocal and aerial displays of male Blue-black Grassquits gave the appearance that the birds were on a display arena. These habits typify species with lek behavior and imply polygamous mating relationships. Alderton, however, reported that this species in Panama was monogamous with the male participating in nest building, incubation, and caring for the young. D. E. Davis (*Bird-Banding* 12:93-97, 1941) mentioned that it was "typically" territorial, and A. H. Miller (*Auk* 69:450-457, 1952) thought that he had flushed a male from a nest in Colombia. If these reports are correct, and if the territories I observed in Costa Rica were typical of the Blue-black Grassquit in Panama and Colombia, then the territories of this species are among the smallest reported among passerines.

I am grateful to the Organization of Tropical Studies for providing me the opportunity to make these observations.

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