

Results of the present study are the strongest evidence to date that Red-winged Blackbird song functions in territory defense. However, differences in effectiveness, which appear to depend on the identity of the singer and receiver, raise interesting new questions about the functions of song in this species.

It is my pleasure to thank Peter Marler, William A. Searcy, Donald E. Kroodsmma, Robert B. Payne, Kenneth A. Shiovitz, J. Bruce Falls, and John R. Krebs for their many useful comments and criticisms. Special thanks are given to the Cary Arboretum of the New York Botanical Garden for permitting use of the study area. Financial support was provided by NIMH Fellowship MH07646.

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Received 28 April 1980, accepted 1 October 1980.

Discovery of the Nest and Eggs of the Cinereous Finch (*Piezorhina cinerea*), a Peruvian Endemic

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The Cinereous Finch (*Piezorhina cinerea*), the only member of its genus, is endemic to the coast of Peru from the Department of Tumbes south to the Department of La Libertad (Paynter, 1970, Checklist of birds of the World, vol. 13, Cambridge, Mus. Comp. Zool.). Within its restricted range, it is a fairly common bird in proper habitat. I have seen as many as 10 individuals during a morning walk. In 1978, six nests of this species were found about 4 km north of Ñaupe (5°34'20"S, 79°54'35"W; elev. 150 m) in the Department of Lambayeque, Peru. Because I have found no published information on any aspect of the biology of this species, I present the data on these nests below.

The habitat around Ñaupe is characterized by low dunes and sandy plains sparsely covered with short shrubs and occasional small trees (Fig. 1A). These dunes are on the eastern edge of the barren Desierto de Sechura where it abuts the western edge of the Andean foothills (visible in Fig. 1A). The dominant plants in this community are listed in the "Mapa Ecologico del Peru: Guía Explicativa" (1976, Lima, Oficina Nacional de Evaluacion de Recursos Naturales).

I assigned a single field number to a nest and all of its contents. All nests and eggs are now in the collection of the Louisiana State University Museum of Zoology.

NEST #1 (Fig. 1B).—On 31 May at 0730, I found an adult *Piezorhina* near a nest containing five eggs located 2.7 m up in a small unidentified tree (possibly *Capparis ovalifolia*). At 1700 I flushed a

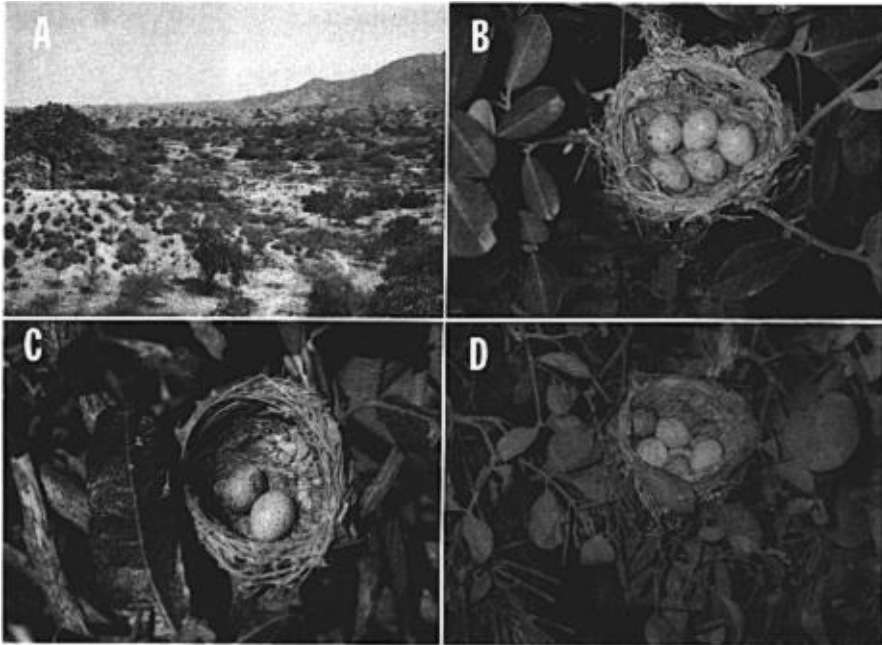


Fig. 1. Habitat and nests of the Cinereous Finch. All three nests also contain eggs of the Shiny Cowbird. The finch eggs are as follows: (B) lower two eggs, (C) upper left egg, and (D) three darkest eggs.

Piezorhina from the nest tree, and probably from the nest. After nightfall, I returned and saw by flashlight a *Piezorhina* on the nest. The next morning I collected the nest and eggs (MDW #1505). Two eggs were those of *Piezorhina*, and they contained small embryos; the other three were fresh eggs of the Shiny Cowbird (*Molothrus bonariensis*). One egg of each species had been punctured.

NEST #2.—On 1 June Philip J. Barbour collected an empty nest (PJB #2135) from the same species of tree that had supported Nest #1.

NEST #3 (Fig. 1C).—On 4 June I found a nest 2.5 m up in the outer, lowermost branches of a "sapote" tree (*Capparis angulata*). Three adult finches (yellow bills) were perched in the nest tree. When I revisited this nest 1 h later, an adult flushed from the nest. I collected the nest and eggs (MDW #1514). Two of the eggs were those of *Piezorhina*; I broke one of them while trying to reach the nest; both contained small embryos. The third egg was a fresh one belonging to *M. bonariensis*.

NEST #4 (Fig. 1D).—Also on 4 June, I found a nest (MDW #1515) 2.5 m up in a clump of mistletoe growing in an "overo" (*Cordia rotundifolia*) shrub. Two adults were near this nest, which contained three *Piezorhina* eggs and four *M. bonariensis* eggs; the eggs of both species were relatively fresh. Two of the finch eggs had been broken, one too badly to measure.

NEST #5.—On 6 June I found an abandoned nest 4.3 m up in a "faique" (*Acacia* sp.) tree. This nest (MDW #1572) contained shells of at least two *M. bonariensis* eggs; one of these was embedded in the bottom of the nest cup. Apparently the finches had covered this egg by adding more material to the nest.

NEST #6.—Also on 6 June, I collected a nest (MDW #1574) found lying on the ground in the open. I did not discover the site from which it had been dislodged.

The six nests are very similar and distinctive in appearance and measurements (Table 1). With my knowledge of the nests of the other birds breeding in the area, I was able to confidently identify the two empty *Piezorhina* nests by their appearance alone. The nests are composed primarily of the same type of yellowish weed stems. Spider webs help hold these stems together and anchor the nests to their supporting branches. The egg cases of spiders and yellowish shreds of a tobacco-like leaf are attached to the exteriors of the nests. These same yellowish plant fibers line the nest cups, and a few coarse rootlets hold these fibers in place. The lining of Nest #3 contains three hairs, some string, and a piece of man-made fabric. Nest #4 has several pieces of what appear to be wool in the lining; this is the only nest so well-lined that one cannot see through the wall of the cup in at least one place. The nests were anchored securely to their supporting branches. In most cases they were placed in a horizontal fork and were

TABLE 1. Measurements (mm) of six nests of *Piezorhina cinerea*.

Nest number	1	2	3	4	5	6
Field number	MDW #1505	PJB #2135	MDW #1514	MDW #1515	MDW #1572	MDW #1574
External width	90 × 90	90 × 90	80 × 90	90 × 95	95 × 95	85 × 90
External depth	70	60	70	70	— ^a	70
Cup width	64 × 70	66 × 70	56 × 65	59 × 69	—	54 × 61
Cup depth	40	35	40	35	—	40

^a The rim of Nest #5 was too damaged to yield complete measurements.

supported on their bottoms and sides by several branches. Nest #1 differed in that it was placed against the main stem of a tree in an upright crotch.

The markings of the seven eggs show considerable inter-clutch variation and are less diagnostic than the nests for species identification. All are ovate and have a light blue ground color; they are heavily spotted and blotched with various shades of browns and grays. One set, MDW #1515 (Fig. 1D), is more heavily marked than the other two sets; these eggs are almost as heavily marked as those of *Passer domesticus*, but they otherwise bear no real resemblance to the eggs of the latter species. The five unbroken eggs average $23.1 \pm 0.7 \times 16.9 \pm 0.1$ mm (range 22.3–24.2 × 16.7–17.1 mm); they are considerably smaller than the eight *M. bonariensis* eggs ($23.7 \pm 1.1 \times 18.5 \pm 0.7$ mm) found with them. The cowbird eggs are less heavily marked (one is immaculate) than the finch eggs.

The records presented above add another species to the list of birds parasitized by the Shiny Cowbird. The presence of cowbird eggs in four nests suggests that *Piezorhina* is a frequent host of this brood parasite. Of the other species I found nesting in this area, only the Long-tailed Mockingbird (*Mimus longicaudatus*) was as heavily parasitized; six of seven mockingbird nests contained eggs of both species. The punctured and broken eggs in the *Piezorhina* nests had probably been damaged by cowbirds. The buried egg in Nest #5 indicated that *Piezorhina* does not always accept cowbird eggs.

On 4 June I saw an adult *Piezorhina* feeding an immature finch that was already out of the nest. The juvenile bird had streaked underparts, a gray bill, and a light-colored eye-ring.

My observations were made during the transition from the rainy to the dry season. Light rain fell on the morning of 27 May but, to my knowledge, not thereafter. When I revisited the area on 27 June, I found no evidence of breeding among *Piezorhina* or any of the other 20 species of birds whose nests I had found a month earlier.

General agreement is lacking on the taxonomic relationships of *Piezorhina*. Meyer de Schauensee (1966, The species of birds of South America and their distribution, Narberth, Pennsylvania, Livingston; 1970, A guide to the birds of South America, Wynnewood, Pennsylvania, Livingston) placed *Piezorhina* near the grassquits (*Tiaris*) and seedeaters (*Sporophila*). Paynter (1970) considered *Piezorhina* more closely related to the monotypic Slender-billed Finch (*Xenospingus concolor*) and the Inca-Finches (*Incaspiza*). Unfortunately from the standpoint of making taxonomic comparisons, the nests and eggs of *Xenospingus* and *Incaspiza* remain undescribed.

I am grateful to Srs. Manuel A. Plenge and Gustavo del Solar for their assistance in Peru. P. J. Barbour collected one of the nests and helped identify some of the plants. John S. McIlhenny, Babette M. Odom, H. Irving Schweppe, and Laura R. Schweppe provided financial support for fieldwork. I thank G. R. Graves, L. F. Kiff, J. P. O'Neill, and J. V. Remsen, Jr. for commenting on earlier drafts of this paper. I benefited from a grant from the Chapman Memorial Fund to study the biology and systematics of Peruvian birds. Received 26 May 1980, accepted 7 August 1980.

The Capture Efficiency of Flickers Preying on Larval Tiger Beetles

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Although insects make up a significant proportion of the diets of many bird species, few data are available on the success rates of avian predators feeding on arthropod prey. Capture rates have been

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