

period consisted of assemblages of thirty or more birds. Such large foraging flocks appear typical for the species (Slud 1964).

I suggest that the following social organization may occur in these grosbeaks. Raising of young appears to be accomplished by a core group consisting of a mated pair and one or two adult helpers, perhaps offspring from a previous season, as is the case in cooperative breeders that have been studied (Brown 1978). Feeding units may consist of the core group with or without additional, less closely related members. The large feeding and/or roosting assemblages may be composed of varying numbers of feeding units.

Skutch's observations and the participation of only four birds in the high-intensity defense of young in my observations are consistent with the notion of a core breeding group. The variable size of the flocks arriving at the nest may be due to changeable membership in feeding units. Perhaps these non-core members are non-breeders or birds who bred earlier or will breed later in the season. Skutch's birds fledged in mid-May in contrast to mine in early July. A similar pattern has been suggested for the Turquoise Tanager (*Tangara mexicana*) with a similar feeding ecology (Snow and Collins 1962).

These observations were made while I was assisting in an Organization for Tropical Studies field ecology course. I thank J. S. Denslow and M. Balph for comments on the manuscript and J. Dillon for her observations.

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*Department of Zoology, University of Wisconsin, Madison, Wisconsin 53706. Accepted for publication 3 March 1980.*

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### FIRST DESCRIPTION OF THE NEST, EGGS, AND YOUNG OF THE TUMBES SPARROW (*AIMOPHILA [RHYNCHOSPIZA] STOLZMANNI*)

MORRIS D. WILLIAMS

Tumbes Sparrows (*Aimophila [Rhynchospiza] stolzmanni*) live only in the region along the western slope of the Andes in extreme southwestern Ecuador and northwestern Peru. To the best of my knowledge, their nests, eggs, and young have not been previously described.

In May 1978 I found two nests of this species in the northern part of the Department of Lambayeque, Peru, 3.5 km north of the village of Naupe on a plain bordering the dry bed of the Río de Naupe (5° 34' 20"S; 79° 54' 35"W; elevation 150 m). This area lies on the eastern edge of the Desierto de Sechura where it meets the western foothills of the Andes. The landscape is characterized by dunes that rise to about 10 m above the sandy plains. Clumps of shrubs and occasional low trees and cacti are rather evenly spaced over the whole area, and grass sparsely covers most of the ground around them. The *Mapa Ecológico del Perú: Guía Explicativa* (Oficina Nacional de Evaluación de Recursos Naturales, Lima, 1976) gives the following plants as characteristic of these arid regions: the deciduous trees and shrubs *Prosopis juliflora*, *Capparis angulata*, *C. ovalifolia*, *Cordia rotundifolia*, and *Acacia* sp., and the cacti *Cereus* sp. and *Opuntia* sp. Herds of cattle graze and browse here. Although the dry season had just begun in this region, a light rain fell on the morning of 27 May.

On 27 May I flushed an incubating Tumbes Sparrow from a nest placed 20 cm above the ground among the branches of a fallen cactus (Fig. 1). The single egg was bluish-white, immaculate, without gloss, and mea-

sured 21.8 × 16.6 mm. Apparently there had been at least one other egg since yolk was smeared over the nest and remaining egg.

On 30 May, a single warm egg was present, and an adult was near the nest. On 1 June I collected the egg, which did not contain a visible embryo; it is now in the collection of the Louisiana State University Museum of Zoology (MDW #1506).

The branches of the cactus formed such an integral part of this nest that the structure fell apart when I chopped the branches away. The nest was composed mostly of grasses and a few coarser sticks, and included one hair and one feather in the lining.



FIGURE 1. Nest of the Tumbes Sparrow amid the branches of a fallen cactus, Dept. of Lambayeque, Peru.

On 31 May I found a second nest in an arborescent cactus after watching an adult carry food to the young twice. This nest was located a few hundred meters from the first one. It was an open cup similar to the first nest, except more substantially constructed. It was supported on three sides by branches at least 15 cm in diameter. This nest contained four well-feathered young. On 2 June this nest was empty; it was lined with fine rootlets and several dark-colored hairs. Although it was severely damaged when the supporting branches were cut away, the nest was preserved (MDW #2330) and is now in the LSUMZ collection.

The juvenal plumage of these birds (LSUMZ Photograph File #116) appears basically like that of adults with the following exceptions: there are distinct dark streaks in the central gray crown patch and on the throat; the sides of the crown are duller, less rufous. The lining of the mouth is red. The lower tomium and rictal commissure are bright yellow. The mandible is yellowish, and the maxilla is grayish.

On 2 June, near the village of Ñaupe, I saw an adult Tumbes Sparrow perched with an immature Shiny Cowbird (*Molothrus bonariensis*) in the same small bush, but I did not establish whether the cowbird was being fed by the sparrow. These cowbirds were common brood parasites in this area; I found a total of 32 of their eggs in 14 nests of four other species breeding nearby. It seems probable that *A. stolzmanni* is also a host of this cowbird.

The coloration of the egg of *A. stolzmanni* supports

Paynter's (Breviora No. 278, 1967; Check-list of birds of the world, vol. 13, Museum of Comparative Zoology, Cambridge, MA, 1970) return of this species to the genus *Aimophila* from the monotypic genus *Rhynchospiza* of Ridgway (Auk 15:223, 1898). This type of egg is characteristic of *Aimophila*, but is possessed by only a few other emberizines (Wolf, A.O.U. Ornithol. Monogr. No. 23, 1977).

In contrast to Paynter's observations in Ecuador (1967), I found the Tumbes Sparrow relatively tame. I saw a total of 47 birds on 12 occasions in May, June, and July in Lambayeque near Ñaupe and Olmos.

My studies in northern Peru were greatly facilitated by the hospitality of Gustavo del Solar at his hacienda in Las Pampas. I am grateful to my field companion T. A. Parker, III, for his assistance. I have drawn freely from Manuel A. Plenge's unparalleled knowledge of the literature of Peruvian birds. I thank J. P. O'Neill, J. V. Remsen, Jr., and J. S. Weske for their critical comments on early drafts of this paper. Financial support for my field work was provided in part by John S. McIlhenny, Babette M. Odom, H. Irving Schweppe, and Laura R. Schweppe. My studies of the biology and systematics of Peruvian birds were aided by a grant from the Frank M. Chapman Memorial Fund of the American Museum of Natural History.

*Museum of Zoology, Louisiana State University, Baton Rouge, Louisiana 70893.* Accepted for publication 2 May 1980.

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## JABIRU NEST, NEST BUILDING, AND QUINTUPLETS

BETSY TRENT THOMAS

The Jabiru (*Jabiru mycteria*) is found from Belize in Central America to Argentina (Blake 1977) and breeds throughout this range (Kahl 1971a). It is said (J. C. Ogdin, pers. comm.) also to breed regularly in western Campeche, Mexico. Although these storks are widespread and conspicuous (over 1 m tall), I know of no published observations of them over a sustained period of time in the same locality. I believe that the following notes on their nesting may therefore be of interest.

From 1972 through 1979 I made some observations of Jabirus incidental to another study. My study site was a cattle ranch in the Venezuelan llanos, which are low-altitude savannas; for a fuller description see Thomas (1979). The Jabiru is a permanent resident in this area and a few pairs regularly breed there every year. Nesting starts after the area is flooded by seasonal rains, usually about the middle of August, and continues into the beginning of the dry season at the end of the calendar year. Pairs nest alone, not colonially, but nests are sometimes within 100 m of nesting colonies of other ciconiiform species. In 1978 I found five active Jabiru nests within a triangle of about 250 ha. Pairs fly aggressively at conspecifics who approach their nest area.

Jabirus build their huge nests in large trees in Guyana (Chubb 1916), in western Venezuela (Bent 1926) and in Surinam (Spaans 1975). Kahl (1971b) found

nests in Argentina in both palms and other trees. In the Venezuelan llanos I have found nests only in the tops of the palm tree (*Copernicia tectorum*). Mature palms on the study site are reported to be from 3-9 m high (Troth 1979), and the 11 nests I have found were generally in the tallest solitary palms. Pairs of Jabirus always select a living palm and, one at a time, each bird stands in the top and stomps down the central growing fronds. Often its mate watches from a nearby palm, which becomes the perch for the off-duty parent as brooding and incubation proceed. In 1972, in one small area, six palms were stomped down before one was chosen for the nest.

Once the nest is started, the pair work together on it for part of the day, usually in the morning, bringing sticks as long as 1.5 m and as thick as 5 cm. Kahl (1971b) reported sticks of similar diameter and 2 m long being used in Argentine nests. When the incomplete nest is unguarded, other breeding birds such as the Great Egret (*Casmerodius albus*) and the Maguari Stork (*Ciconia [=Euxenura] maguari*) steal suitable sticks. I have also seen Jabirus steal nest material from the unoccupied nests of other waders. The center of the relatively flat Jabiru nest is lined with dry grass. One nest started on 8 August 1976 appeared to be completed by 5 October. Two out of the 11 nests I observed were reused successfully the following year. Reuse of the same nest was reported by Schomburgk (*in* Chubb 1916) and probably is more common when Jabirus nest in large trees. In the Venezuelan llanos, however, a new nest is made in the next breeding season because the palm usually dies after the first year.

Jabirus copulate on the nest and undoubtedly the concentration of their weight helps to compact and strengthen the nest material. The nest is large enough