

NOTES ON THE NATURAL HISTORY OF THE ANDEAN COCK-OF-THE-ROCK (*RUPICOLA PERUVIANA*) IN WESTERN VENEZUELA

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Notas sobre la historia natural del Gallito de las Sierras (*Rupicola peruviana*) en el occidente de Venezuela.

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Cocks-of-the-rock (*Rupicola* spp.), Cotingidae, are typical lek-breeding species with highly marked sexual dimorphism and complex displays (Snow 1982, Johnsgard 1994). The Guianan Cock-of-the-rock (*R. rupicola*) is restricted to rocky areas of the Guiana shield (Snow 1982), whereas the Andean Cock-of-the-rock (*R. peruviana*) inhabits humid cloud forests from 1000–2500 m in the Andes of Venezuela to Bolivia (Hilty & Brown 1986, Hilty 2003). Until recently, the Andean Cock-of-the-rock (*R. p. aequatorialis*) was known in Venezuela from only two localities: San Cristóbal, Táchira state (Phelps & Meyer de Schauensee 1979, Hilty 2003), and San Isidro road, Barinas state (Snow 1982, Hilty 2003). New additional localities for this species are now known in the Andean foothills in western Barinas state. Leks were found in the surroundings of El Quino (1500 m), San Juan Bautista (800 m) and Santa María de Canagua (600m) (Weller & Rengifo 2003).

Although the social and mating behavior

of the Guianan Cock-of-the-rock has been well documented (Trail 1985, 1987; Trail & Adams 1989), this is not the case of the Andean Cock-of-the-rock, for which there is only a single study that describes the natural history in Colombia (Benalcázar & Silva de Benalcázar 1984). This work was conducted at a single lek and showed that the Andean Cock-of-the-rock has a unique display organization, in which males display in pairs and members of a pair direct most of their displays at each other.

The following observations were recorded from 10 July to 28 July 2002, at the San Isidro road (08°49'54"N, 70°34'57"W), in the foothills of the Venezuelan Andes, northwestern Barinas state. This lek was discovered by P. Schwartz in the late 60s (Goodwin 1997) and is located in a steep and wet forested ravine surrounded by rocky waterfalls. The study period corresponds to the non-breeding season. The lek was visited daily during a week and behavioral observations of the birds that



FIG. 1. Lek of the Andean Cocks-of-the-rock in the Andean foothills of Barinas State, western Venezuela. Lines indicate the three display areas: left, central and right. Arrows show display perches at the central area.

gathered at this spot were carried out. Males were seen displaying at the lek early in the morning (06:00 to 08:30 h), and late in the afternoon (17:00 to 18:45 h). Observations at other times of the day did not reveal the presence of Cocks-of-the-rock in the lek or its immediate surroundings. During this time males were observed foraging and vocalizing in the nearby forest. The lek was not used as a roosting site, and males flew away in different directions after performing the evening displays.

The number of males that gather at the lek ranged from 8 to 14 individuals. The birds segregated themselves in three different display areas within the lek (Fig. 1). The first one was the central area which included three different display perches: two of them, at about 15 m from the ground, were composed

mainly of horizontal branches of different trees; here 2–4 males displayed. A third display perch in this same central area involved a higher spot (≈ 25 m) on the upper branches of a tree where two males displayed. These males, which were located higher than the rest of the males, were the first to arrive and the last to leave the lek. Females and juvenile males were also observed in the central area. The second displaying area involved a couple of spots to the right of the central area where 3–4 males displayed in several trees. Finally, the third area was located to the left and included two different display perches in several trees where 4–5 males displayed.

Displays were similar to those reported by Benalcázar & Silva de Benalcázar (1984) in that males distributed themselves in pairs within the lek. Each pair controlled an arbo-

real display perch where the pair directed most of their displays to one another. Groups of three males, however, were observed displaying together (in trios) in two opportunities. The typical display consisted in wing flaps, head-bobbing and bowing, arching “push-ups”, and abrupt “about-face movements”, accompanied by loud crowing vocalizations and beak clapping (Hilty 2003).

Aggressive behaviors were not observed among adult males at the lek, and consequently, we were unable to determine a dominance hierarchy. Aggressive interactions, however, were observed among adult and juvenile males. Juvenile males and females present similar plumage coloration, but we differentiated them based on the eye color. Females eyes are pale blue, whereas the eyes of juvenile males are yellowish amber (Hilty 2003). In the two opportunities in which juveniles were observed arriving at the lek, they were promptly chased away (< 5 min). Single females were observed in three occasions at the lek, and their average permanence was short (10.3 ± 2.5 min). One of these females was chased by males located on central perches and displayed in front of one of them.

When not at the lek, male Cocks-of-the-rock dispersed in the area of San Isidro road where we observed them ($N = 32$) foraging alone (68.75% of the times) or in small groups (2 males = 28.13% of the times, and 3 males = 3.12% of the times). The food items most consumed were fruits of *Cecropia* sp., which were abundant during the study period. These fruits had not been registered as part of the species diet of this species before (Benalcázar & Silva de Benalcázar 1984, Luy & Bigio 1994), but fruits of *Cecropia sciadophylla* have been reported to be consumed by Guianan Cocks-of-the-rock (Théry & Larpin 1993). Additionally, a male was observed feeding on an unidentified large insect on one opportunity. Cocks-of-the-rock were more active (foraging and flying) from 08:00 to 10:00 and

from 17:00 to 18:00 h. Females were observed foraging or flying in groups with males in four instances. Vocalizations outside the lek were rare and, although playback trials were carried out during three mornings when groups were located, individuals did not respond to them.

The ecological requirements of this spectacular species are still poorly known. Unfortunately, some of the Venezuelan mountain forests were Andean Cocks-of-the-rock formerly inhabited have been destroyed (e.g., near Los Hernández, Táchira state, pers. observ.). Only further field studies will provide additional data that could guide future conservation actions.

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