
THE NEST AND EGGS OF THE BEAUTIFUL JAY (*CYANOLYCA PULCHRA*)**El nido y los huevos de la Urraca Chocoana (*Cyanolyca pulchra*)****Alejandro Solano-Ugalde**

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ABSTRACT

We present the first description of the nest and eggs of the Beautiful Jay (*Cyanolyca pulchra*) found in northwest Pichincha, Ecuador. This corvid is endemic to the Chocó bioregion, it is known from few localities, and is considered globally Near Threatened. The nest was a cup constructed of thin sticks with a lining of fine brown fibers and was decorated externally with moss; it was located 2.5 m above the ground in a dense 4.5 m *Clusia* tree on a forest edge; the clutch was two eggs, pale green with fine, sparse brownish blotches. The nest and eggs resembled those reported for other *Cyanolyca* species. Only two adults attended the nest, whereas in the sympatric *C. turcosa* three adults were observed at a nest. *Cyanolyca turcosa* may be displacing *C. pulchra* as deforestation advances. We encourage further study of *C. pulchra*, especially in its area of sympatry with *C. turcosa*, to obtain information to aid in its conservation.

Keywords: breeding biology, Chocó, conservation, *Cyanolyca pulchra*, nest description.

RESUMEN

Presentamos la primera descripción del nido y los huevos de la Urraca Chocoana (*Cyanolyca pulchra*), encontrados en el noroccidente de Pichincha, Ecuador. Este córvido es endémico de la biorregión del Chocó, ha sido registrado en pocas localidades y está categorizado globalmente como Casi Amenazado. El nido era una taza construida con palitos delgados con un forro de finas fibras cafecinas; estaba ubicado a 2.5 m del suelo en un árbol denso de 4.5 m de *Clusia* en un borde de bosque; la nidada incluía dos huevos de color verde pálido con manchas cafés finas y esparcidas. El nido y los huevos fueron similares a los reportados para otras especies de *Cyanolyca*. Dos adultos atendieron el nido, a diferencia de *C. turcosa*, especie en la que tres adultos fueron observados en un nido. *Cyanolyca turcosa* podría estar desplazando a *C. pulchra* conforme avanza la deforestación. Es importante realizar más estudios sobre *C. pulchra*, especialmente en su área de simpatría con *C. turcosa*, para obtener información para ayudar en su conservación.

Palabras clave: biología reproductiva, Chocó, conservación, *Cyanolyca pulchra*, descripción de nido.

The genus *Cyanolyca* (Corvidae) comprises nine species of jays distributed from Mexico to Bolivia, with the majority of species occurring in Mesoamerica (Madge & Burn 1994). Some species of *Cyanolyca* are widespread and common in a number of different localities (e.g., Azure-hooded Jay *C. cucullata*, throughout most of Central America), whereas other species are confined to smaller geographical areas including several Endemic Bird Areas (e.g., Dwarf Jay *C. nana*, in southern Mexico) (Madge & Burn 1994, Stattersfield *et al.* 1998). Although the distribution, taxonomy, and systematics of this group are relatively well understood (Madge & Burn 1994, Bonaccorso 2009), information on the natural history of species in the genus remains sparse.

The Beautiful Jay (*Cyanolyca pulchra*) is confined to the Chocó Endemic Bird Area (EBA 041, Stattersfield *et al.* 1998), within which it ranges from central Colombia (Chocó and Valle; Hilty & Brown 1986) to northwestern Ecuador (Mindo, Tandayapa, Chiriboga; Ridgely & Greenfield 2001) and Chical, Carchi Province (specimen at the Academy of Natural Science of Philadelphia). In Ecuador, given its small range, the species has been regarded as rare to uncommon in subtropical cloud forests and mostly recorded from a narrow altitudinal belt (1300 to 2200 m; Ridgely & Greenfield 2001). *Cyanolyca pulchra* is most frequently seen singly or in pairs, rarely in small family groups (Madge & Burn 1994, Ridgely & Greenfield 2001). Because the natural habitat in the Chocó bioregion is currently at risk owing to timber extraction, oil and heart-of-palm monoculture and mineral mining, *C. pulchra* has been assigned Near Threatened status at a global scale (BirdLife International 2009) and is regarded as Vulnerable in Ecuador (Greenfield 2002). In Colombia, the species was considered Near Threatened (Renjifo *et al.* 2002), and its status is currently being reevaluated.

In this manuscript, we present the first description of the nest and eggs of *C. pulchra* from northwestern Ecuador. Prior to our observations, information on the breeding biology of this species was limited to a brief mention of an active nest from northwestern Ecuador (Greeney & Nunnery 2006). We made observations of a single nest

found adjacent to the interpretation center of Reserva Orquideológica Pahuma (0° 2' N, 78° 38' W; 1900 m). This reserve encompasses subtropical montane cloud forest protected since 2000 and was created to protect the rich orchid community found in the area. The reserve is located between the town of Mitad del Mundo and the Tandayapa Valley, Pichincha Province, Ecuador. RL had observed a nest of the species a year earlier at the study site, which greatly facilitated locating the nest described below.

We first inspected the nest of *C. pulchra* on 2 April 2009, with the aid of a ladder. The nest was an open cup supported by the intersection of several branches in the central part of the crown of a 4.5 m tall *Clusia* sp. (Clusiaceae) tree (Fig. 1). The nest was located 2.5 m above the ground. The cup measured 11.2 cm in diameter (internal) and was 5.9 cm deep, with a wall thickness at the rim of 4.7 cm, and a tail of moss at the base of the cup measuring 14.4 cm. The outside of the nest was decorated with green moss, but the foundations and portions of the walls were constructed with long and thin dead sticks that supported the cup. The interior was composed of finely woven brownish fibers, apparently all of the same source (Fig. 2).

At the time of discovery, the nest contained two sub-elliptical eggs (31.1 x 28.0 and 32.6 x 23.4 mm), pale aqua-green in color and with tiny, sparse, brownish blotches more densely distributed towards the larger end (Figs. 2 and 3). When we



Figure 1. Lateral view of the nest of Beautiful Jay *Cyanolyca pulchra*, Reserva Orquideológica Pahuma, Pichincha, Ecuador, 2009. Photo by Alejandro Solano-Ugalde.



Figure 2. Nest and eggs of the Beautiful Jay *Cyanolyca pulchra*, Reserva Orquideológica Pahuma, Pichincha, Ecuador, 2009. Photo by Alejandro Solano-Ugalde.

first approached the nest, the adult was not present; however, before we finished recording data, two adults appeared silently near the nest. Ten days later, the nest was observed at the time of hatching, and subsequently two adults attended the nest until fledging (D. Laufenberg pers. comm.).

To date, the nests of only two of the nine species of corvids in the genus *Cyanolyca* had been described (Azure-hooded *C. cucullata* and Dwarf Jay *C. nana*, Madge & Burn 1994). Our observations confirm that *C. pulchra* shares characteristics of nesting behavior with these species. Although many corvids are highly social and cooperative breeders, our observation and other published data (Madge & Burn 1994) suggest that *Cyanolyca* is a



Figure 3. Egg of the Beautiful Jay *Cyanolyca pulchra*, Reserva Orquideológica Pahuma, Pichincha, Ecuador, 2009. Photo by Alejandro Solano-Ugalde.

genus of solitary nesters. However, observations at a nest of Turquoise Jay *C. turcosa* confirmed the presence of three adults adding material to their nest, which likely reflects cooperative breeding in at least some species (H. Greeney pers. obs.).

A clutch size of two eggs is consistent with that suggested for the closest relative of *C. pulchra*, *C. cucullata* (Winnett-Murray & Murray 1988, Bonaccorso 2009). Regarding egg descriptions, within *Cyanolyca* there is only information for *C. nana* (Hardy 1971), which lays eggs similar in ground color and patterning to those we observed for *C. pulchra* (pale greenish-blue mottled with olive in *C. nana* and pale aqua green with sparse brownish blotches in *C. pulchra*); however, no shape was recorded for *C. nana*.

Information on nesting habitat and nest architecture for *Cyanolyca* species is sparse. Although our observations are limited, nest placement in the central crown of small- to medium-sized trees close to intervened areas seems to be shared between *C. pulchra* and *C. turcosa* (Greeney *et al.* 2010, H. Greeney pers. obs.). Bulky cup-like nests made predominantly of sticks with a thin fibrous lining and external decoration with mosses appears to be the norm in the genus (Goodwin 1976, Winnett-Murray & Murray 1988, Madge & Burn 1994).

Although *C. pulchra* seems to occur at lower densities than its sympatric congener *C. turcosa* in northwestern Ecuador (Hilty & Brown 1986, Ridgely & Greenfield 2001), we have observed that *C. turcosa* colonizes newly created habitats following road clearing or establishment of pastures, seemingly displacing the more forest-based *C. pulchra*. Because the social structures of *C. pulchra* and *C. turcosa* during breeding appear to differ (solitary nesters vs. cooperative breeders), we recommend that further studies focus on the areas of overlap and examine interspecific interactions, along with the basic natural history of these sympatric congeners. The results of these studies should prove useful in addressing conservation issues specific to *C. pulchra*. Such data are critically needed because the species' range lies entirely within the highly threatened

Chocó Endemic Bird Area (Stattersfield *et al.* 1998), which has lost more than 40% of its natural habitat.

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LITERATURE CITED

- BIRDLIFE INTERNATIONAL. 2009. BirdLife International Species factsheet: *Cyanolyca pulchra*. Downloaded from <http://www.birdlife.org> on 1/4/2010.
- HARDY, J. W. 1971. Habitat and habits of the Dwarf Jay *Aphelocoma nana*. *Wilson Bulletin* 83:5-30.
- HILTY, S. L. & W. L. BROWN. 1986. A guide to the birds of Colombia. Princeton University Press, Princeton, NJ.
- BONACCORSO, E. 2009. Historical biogeography and speciation in the Neotropical highlands: Molecular phylogenetics of the jay genus *Cyanolyca*. *Molecular Phylogenetics and Evolution* 50:618-632.
- GOODWIN, D. 1976. *Crows of the world*. Comstock Publ. Assoc., Cornell University Press, Ithaca, New York.
- GREENEY, H. F. & T. NUNNERY. 2006. Notes on the breeding of northwestern Ecuadorian birds. *Bulletin of the British Ornithologists' Club* 126:38-45.
- GREENFIELD, P. J. 2002. *Urraquita Hermosa, Cyanolyca pulchra*. Pp. 325. en: T. Granizo, C. Pacheco, MB Rivadeneira, M Guerrero y L Suárez (eds.). *Libro rojo de las aves del Ecuador*. SIMBIOE/ Conservación Internacional/ EcoCiencia/ M.A./ UICN. Serie de Libros Rojos del Ecuador. Tomo dos. Quito, Ecuador.
- MADGE, S. & H. BURN. 1994. *Crows and Jays: A Guide to the Crows, Jays and Magpies of the World*. Houghton Mifflin Co., Boston, MA.
- RENJIFO, L. M., A. M. FRANCO-MAYA, J. D. AMAYA-ESPINEL, G. H. KATTAN, AND B. LÓPEZ-LANÚS. 2002. *Libro rojo de aves de Colombia*. Serie Libros Rojos de Especies Amenazadas de Colombia. Instituto de Investigación de Recursos Biológicos Alexander von Humboldt & Ministerio del Medio Ambiente, Bogotá, Colombia.
- RIDGELY, R. S. & P. J. GREENFIELD. 2001. *The birds of Ecuador. Vol. 1: Distribution, status and taxonomy*. Cornell University Press, Ithaca, NY.
- STATTERSFIELD, A. J., M. J. CROSBY, A. J. LONG & D. C. WEGE. 1998. *Endemic Bird Areas of the world: priorities for biodiversity conservation*. Cambridge, UK: BirdLife International.
- WINNETT-MURRAY, K. & G. MURRAY. 1988. Two nests of Azure-hooded Jay with notes on nest attendance. *Wilson Bulletin* 100:134-135.

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