

## GIANT COWBIRD (*MOLOTHRUS ORYZIVORA*) AS BROOD-PARASITE OF THE GREEN JAY (*CYANOCORAX YNCAS*) IN THE VENEZUELAN ANDES

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**El Tordo Pirata (*Molothrus oryzivora*) como parásito de cría del Querrequerre (*Cyanocorax yncas*) en los Andes venezolanos.**

**Key words:** Brood parasitism, Giant Cowbird, *Molothrus oryzivora*, Green Jay, *Cyanocorax yncas*, Venezuelan Andes.

Giant Cowbirds have long been considered brood-host specialists of colonial icterids, particularly *Psarocolius* spp. and *Cacicus* spp., which build conspicuous pendulous nests (Orians 1985, Jaramillo & Burke 1999, Davies 2000). The list of known hosts was recently expanded and now includes two non-colonial pendulous-nesting orioles (*Icterus pectoralis* and *I. pustulatus*) (McCrary & Gates 2007) and a non-colonial cup-nesting jay (*Cyanolyca turcosa*) (Welford *et al.* 2007). There is also one older

record of Giant Cowbird parasitism for cooperative-breeding Green Jays (*Cyanocorax yncas*) from Colombia (Lehmann 1960) that has been considered more recently as “obscure” by some authors (McCrary & Gates 2007).

From 19 August–3 September 2008, GBB and GBP observed and photographed a group of Green Jays feeding a highly vocal Giant Cowbird fledgling at La Mucuy Baja (08°36'54"N, 71°04'17"W, 1800 m a.s.l.), Mérida State, Venezuela (Fig. 1). Three similar



FIG. 1. A Giant Cowbird (*Molothrus oryzivora*) fledging being fed by a Green Jay (*Cyanocorax yucas*) at la Mucuy Baja, photographed on 19 August 2008.

observations were made by LDO at Minubás, Mérida State, Venezuela (08°37'14"N; 71°04'48"W; 1757 m a.s.l.) in 2007, 2008, and 2009, the first one consisting of a chick in a nest built in a guava tree (*Psidium guajava* L.), and the later ones of fledglings while visiting feeders, the last of them from mid-August to 25 September, 2009. In both locations, the original low-mountain cloud forest (Ataroff & Sarmiento 2003) had been cleared and replaced by grassland, residential yards, and second growth vegetation.

In the Venezuelan Andes, *M. oryzivora* reaches an altitude of 2200 m a.s.l. (Rengifo *et al.* 2005) and is present on both the north-western and southeastern slopes as well as in the longitudinal Valley of the Chama-

Mocoties rivers (Fig. 2). Three "typical" host species, the Yellow-rumped Cacique (*Cacicus cela*), Crested Oropendola (*Psarocolius decumanus*), and Russet-backed Oropendola (*P. angustifrons*) are also recorded from the Venezuelan Andes (Fig. 2) but none are found in the eastern portion of Chama valley where the Giant Cowbird is common (Lentino *et al.* 2005, Hilty 2002, IASW and PRP pers. observ. including those published in Ramoni-Perazzi *et al.* 2001, Jones *et al.* 2002).

We postulate that the absence of typical hosts for the Giant Cowbird in the eastern Chama valley is the consequence of physical and ecological barriers to their dispersal (Fig. 2). The upper Chama valley is bordered to the west, north, and east by high mountains over 3500 meters in altitude, whilst the vegetation

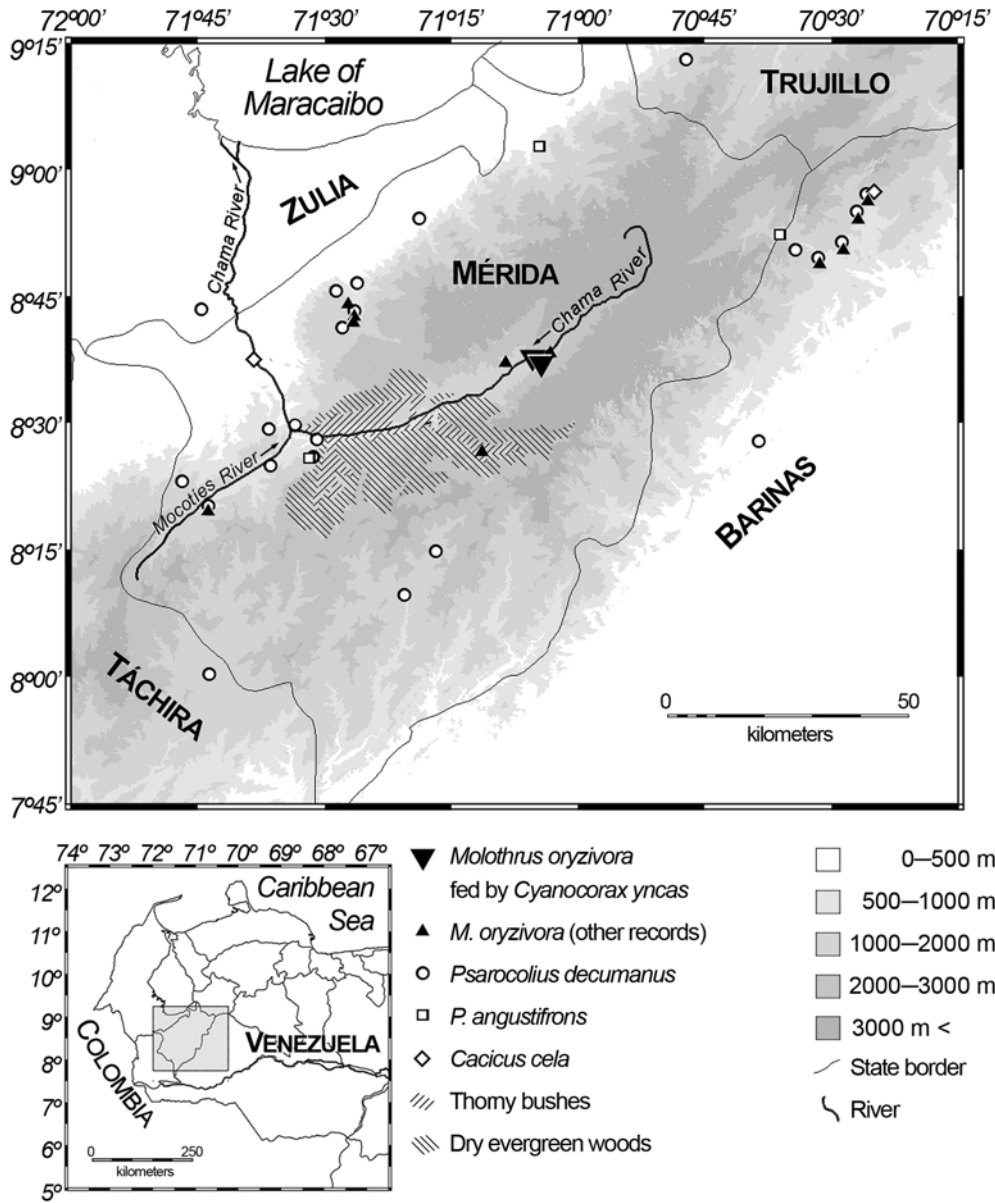


FIG. 2. The central portion of the Venezuelan Andes, according to Shuttle Radar Topography Mission (SRTM), files n07w072, n08w071, n08w072, n09w071, n09w072, 90 m resolution (courtesy of NASA), showing localities for Giant Cowbird (*M. oryzivora*) and its “typical” host-brood species. Data from Hilty (2002), Lentino *et al.* (2005), and IASW and PRP (pers. observ. including those published in Ramoni-Perazzi *et al.* 2001 and Jones *et al.* 2002). The distribution of the vegetation follows Ataroff & Sarmiento (2003).

in the central portion of the Chama valley is characterized by low canopy height (thorny bushes from 500–1800 m a.s.l., and dry evergreen forests from 1600–2700 m a.s.l.) (Ataroff & Sarmiento 2003).

The evolution of host-brood parasitism has been driven in part by egg rejection by the host species and the concomitant development of egg mimicry by parasites (Davies 2000). The eggs of the Giant Cowbird vary in color, shape, and size depending on whether they are laid in nests of oropendolas or caciques (Haverschmidt & Mees 1994), which places the Giant Cowbird in the third of four stages concerning the development of brood-host specialization proposed by Davies (2000). Phylogenetic analysis of cytochrome-*b* gene sequences indicates that *Molothrus* is a monophyletic group, whose members exhibit a transformation series of behaviours that range from absence of parasitism through host-specific parasitism to host-generalist parasitism, with *M. oryzivora* being the second most basal species of the clade (Lanyon 1992).

Our observations raise the question whether the parasitism of the Green Jay (or any of the newly reported host-broods) by the Giant Cowbird represents a recently acquired plasticity to use alternative hosts in the absence of the typical ones or may be considered as relict behaviour. Studies on phylogeny of populations of Giant Cowbirds could clarify this point.

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