

FURTHER EVIDENCE OF PARASITISM OF CHOPI BLACKBIRDS
(*GNORIMOPSAR CHOPI*) BY THE SPECIALIZED SCREAMING
COWBIRD (*MOLOTHRUS RUFOAXILLARIS*)¹

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The Screaming Cowbird (*Molothrus rufoaxillaris*) is the most specialized avian brood parasite within the New World icterine blackbirds (Friedmann 1929, 1963, Rothstein 1990). Throughout most of its range in Argentina, Screaming Cowbirds parasitize a single host, the Bay-winged Cowbird *Molothrus badius* (Fraga 1986). Chicks of both species share a common plumage and similar calls (Fraga 1979, 1986, in press). Data on mitochondrial DNA suggest that host and parasite are not close relatives (Lanyon 1992) and the resemblance is probably mimetic. Screaming Cowbirds are sometimes regarded as having a single host (Lanyon 1992). Nevertheless, Sick (1985) showed that Screaming Cowbirds at the northern (tropical) edge of their distribution in Southeast Brazil parasitized another icterine, the Chopi Blackbird (*Gnorimopsar chopi*). Recently Mermoz and Reboresda (1996) found evidence of Screaming Cowbird parasitism of a third icterine blackbird, the Brown-and-Yellow Marshbird (*Pseudoleistes virescens*). Parasitism of this third host is rare; only a single Screaming Cowbird chick was reared out of hundreds of nests examined by Mermoz and Reboresda (1996).

Sick (1985) believed that parasitism of Chopi Blackbirds by Screaming Cowbirds evolved recently as the parasite invaded deforested areas of Southeast Brazil and in the absence of the usual Bay-winged Cowbird host. His data for Chopi Blackbirds suggest a high frequency of Screaming Cowbird parasitism on this host: in 1973 he found five Screaming Cowbird chicks in three Chopi Blackbird's nests in Rolandia, state of Paraná. Nevertheless, his record of parasitism lacked detailed information, was unique and could be regarded as having only local and transient importance, since Bay-winged Cowbirds invaded Southeast Brazil by the early 1980 (Willis and Oniki 1985). Here I present data showing that Chopi Blackbirds are still effective hosts of Screaming Cowbirds in a locality in Northeast Argentina 410 km SW from the site reported by Sick, and comment on the importance and origin of this interaction.

Data were obtained at Iguazú Airport, Misiones Province, Argentina (25°45'S, 54°27'W) during 14 days

between 26 November 1995 and 14 January 1996. In the Iguazú area (mostly covered with subtropical humid forest), both Screaming Cowbirds and Chopi Blackbirds were found only in extensive clearings around buildings, in particular in the airport and the nearby village where I made all the observations. I did not find Bay-winged Cowbirds, the regular hosts of Screaming Cowbirds, at Iguazú Airport. A resident naturalist, A. Bosso (pers. comm.) has not seen Bay-winged Cowbirds in the airport area since 1994.

Vegetation in the village is mostly lawns and gardens, with planted young pines and Ficus trees. At the airport village, Screaming Cowbirds foraged in lawns and garbage dumps with Giant Cowbirds *Scaphidura oryzivora*, or with Chopi Blackbirds. In two Ficus trees used for roosting I censused 22 Chopi Blackbirds and 6 adult Screaming Cowbirds (9 January 1996).

All Chopi Blackbird nests in the village ($n = 7$) were located in buildings, either under the eaves of roofs or in small windows, a habit reported since Spanish colonial times (Azara 1802). The evidence for Screaming Cowbird parasitism is as follows. On 26 November 1995 and 6 January 1996 I observed four visits of Screaming Cowbirds to two Chopi Blackbird nests during 60 min of observations. One or two pairs of Screaming Cowbirds alighted on the roofs near the nests, and their behavior during the visits was noisy and conspicuous, as it is with their Bay-winged Cowbird hosts elsewhere (Fraga 1986, in press). In all visits, the Screaming Cowbirds were attacked and chased by one or two Chopi Blackbirds. At least three other nests were visited by the parasites.

I checked the contents of two nests in January 1996 and found a brood of three feathered Chopi chicks in one, and two Chopi chicks and one Screaming Cowbird chick (all unfeathered, about 4 days old) in another. This second nest was revisited five days later when the three chicks were feathered. Unfeathered Chopi chicks differ from Screaming Cowbird chicks in the hue of skin (yellowish vs. pinkish), and in bill color (blackish vs. pale pinkish, Fraga 1979). The plumage of Chopi chicks was entirely black, strikingly different from the brownish and rufous plumage of the Screaming Cowbird chick. The begging calls of both species did not differ as much (Fraga 1986), consisting of repeated series of similar notes.

I observed four groups of Chopi Blackbirds with fledged chicks in the airport village; two were parasitized. One group consisted of a single Chopi adult and a Screaming Cowbird chick. The cowbird chick, still

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in the mimetic Bay-wing plumage (Fraga 1986, in press), constantly followed the adult Chopi, begged food from it and was fed four times in about 40 min. On 4 December the Screaming Cowbird chick showed the first black blotches of the adult plumage in the scapulars and back; this stage of postjuvenile molt occurs in chicks aged 34–44 days (Fraga, in press). The parasitic chick was fed by the single adult Chopi six times in 25 min. On 7 January 1996 I observed a second parasitized Chopi group with two Screaming Cowbird chicks and one Chopi chick, fed by 2–3 Chopi adults. The parasitic chicks were seen during the next week when they started molting into black plumage. The non-parasitized Chopi groups consisted of two or three host chicks.

The observations confirm those of Sick and show that Screaming Cowbirds have been using Chopi Blackbirds as hosts in Southeast Brazil and extreme Northeast Argentina for more than 20 years. This interaction may also occur in nearby Paraguay. When read carefully, Azara's (1802) account on the Chopi Blackbird suggests that parasitism occurred in Eastern Paraguay during Spanish Colonial times. Azara's informant (Father Nosedá) described chicks obtained from Chopi nests as having brown plumage with rufescent wing feathers, and molting in captivity into a glossy black plumage with rufous axillars. Only Screaming Cowbird chicks would fit this description, as realized by ornithologists commenting on Azara's work (Laubmann 1939, Pereyra 1945). Pereyra regarded Azara's description as a mistake, but the data presented here suggest otherwise. If correct, this old record argues against Sick's idea that parasitism of Chopi Blackbirds by Screaming Cowbirds evolved recently.

Sick suggested that Screaming Cowbirds are parasitizing Chopi Blackbirds in the absence of the usual Bay-winged Cowbird host; this applies to his locality and my own. Nevertheless, Azara (1802) observed Bay-winged Cowbirds and Chopi Blackbirds in Eastern Paraguay; the first was scarce, and the second common. In Northeast Argentina both hosts are often sympatric (pers. observ. at six localities in the provinces of Formosa, Corrientes and Misiones). I saw Bay-winged Cowbirds (with Screaming Cowbirds) at Puerto Iguazú, 15 km from the Iguazú Airport, in 1979; none were observed there during this study. Further data would clarify whether the Screaming Cowbird-Chopi Blackbird interaction occurs in the areas of sympatry with Bay-winged Cowbirds. If so, data on the breeding success of the parasite with both hosts should be obtained, because Sick's data and my own suggest good survivorship of Screaming Cowbird chicks with Chopi

Blackbirds. This information would help to understand the evolution of host specialization in brood parasites.

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