

On the basis of these findings, I suggest that most female Red-winged Blackbirds breed every year, with no notable surplus existing as non-breeding birds in a breeding population. Thus, the regulation of populations does not appear to be directly influenced by exclusion of potential breeders by territorial behavior of females.—LARRY C. HOLCOMB, *Department of Biology, Creighton University, Omaha, Nebraska 68178. Accepted 18 January 1974.*

Vocal mimicry in the Violaceous Euphonia, *Euphonia violacea*.—In Trinidad, Violaceous Euphonias (*Euphonia violacea*) mimic many different species while singing. From June through September 1961, the last four months of my 3½ years residence, I

TABLE 1
SPECIES IMITATED BY *EUPHONIA VIOLACEA* IN TRINIDAD

Species	Call imitated	Number of individuals mimicking call
PSITTACIDAE		
<i>Touit batavica</i>	flight call	1
CUCULIDAE		
<i>Crotophaga ani</i>	alarm "aani" call	1
TROCHILIDAE		
<i>Phaethornis guy</i>	"tich" flight call	4
DENDROCOLAPTIDAE		
<i>Xiphorhynchus guttatus</i>	"kew" call	1
FORMICARIIDAE		
<i>Formicarius analis</i>	"chook" alarm call	2
PIPRIDAE		
<i>Manacus manacus</i>	"trrr" contact call	2
TYRANNIDAE		
<i>Megarhynchus pitangua</i>	"klee lelele"	3
<i>Pitangus sulphuratus</i>	"kiskadee"	1
<i>Tolmomyias flaviventris</i>	"weet"	1
TROGLODYTIDAE		
<i>Troglodytes musculus</i>	alarm call	1
TURDIDAE		
<i>Turdus fumigatus</i>	"kikiki" alarm call	3
<i>Turdus nudigenis</i>	alarm mew	3
VIREONIDAE		
<i>Hylophilus aurantiiifrons</i>	scolding tit-like note	1
THRAUPIDAE		
<i>Tangara gyrola</i>	"tsee" contact call	2
<i>Ramphocelus carbo</i>	"chink" contact call	2
	squealing note when caught	1
<i>Habia rubica</i>	"pu pu pu"	1
<i>Tachyphonus rufus</i>	"check"	1

made note of the content of all songs heard from this species. I identified the vocalizations of 17 species in 10 families as mimicked by the euphonias (Table 1). In their account of mimicry in the Violaceous Euphonia in Trinidad, Belcher and Smooker (Ibis, 79:532, 1937) reports imitations of only two species, the flycatchers, *Megarhynchus pitangua* and *Contopus cinereus*. All the imitations listed by me were heard in the Northern Range of Trinidad, mostly in the Arima valley. I also heard an adult male euphonia imitating the trill of the Tropical Kingbird (*Tyrannus melancholicus*) near Doctor's River in Tobago.

The euphonia's own song, often uttered without imitations, is a rapid warbling which includes rolling "chree" notes and is punctuated with occasional staccato "bee bee" calls. Imitations were inserted into this song and were perfect to my ear, except that they were much fainter when the model was a bigger species than the euphonia.

All mimicry heard was from adult males, except for two records of imitations by a bird in female-like plumage. This could have been a young male, as its imitations of the hummingbird, *Phaethornis guy*, and the thrush, *Turdus fumigatus*, were less expert than normal. One adult male imitated six different species in one bout of singing, and many imitated four or five species in a bout of song.

The euphonia probably learns the vocalizations of models living in its immediate vicinity. Thus an adult male that sang near an Indian settlement, with cultivation adjacent to forest, mimicked the Smooth-billed Ani (*Crotophaga ani*), the flycatchers *Megarhynchus pitangua* and *Pitangus sulphuratus*, and the thrush, *Turdus nudigenis*; all of these nested in the cleared land. Also imitated by this bird was the manakin, *Manacus manacus*, which nested in the nearby forest. Another adult male, singing in the entirely forested Cumaca valley, was heard imitating only *M. manacus* and *P. guy*, both forest species.

The most interesting piece of mimicry was heard from an adult male near our house; this was an imitation of the harsh squealing of the Silver-beaked Tanager (*Ramphocelus carbo*). This note is made when tanagers are captured, and between June 1958 and September 1961, 88 Silver-beaked Tanagers were caught in nets a few yards from the house; the majority of these squealed while being extracted from the net. At no other time did we hear this call from the Silver-beaked Tanager, but it is presumably normally uttered when the species is caught. Our activities evidently provided the euphonia with a unique opportunity to learn the call, which it must otherwise have little occasion to hear.

The situations in which a pure euphonia song and one including imitations are uttered appear not to be distinct. Songs with and without imitations were heard in the following situations: intermittently while feeding, from stationary birds by themselves, and during territorial border encounters—when two adult singing males come to within four or five yards of each other.

There are no published accounts of mimicking by other species of *Euphonia*, nor in *E. violacea* other than Belcher and Smooker (op. cit.). Slud (Bull. Amer. Mus. Nat. Hist., 128:345-349, 1964) describes vocalizations of a number of euphonias from Costa Rica as consisting of a wide repertoire of unmusical calls; it is probably a relatively short step from this situation to imitation of other species. Notably nearly all the calls imitated by the Violaceous Euphonia are rather unmusical and staccato, and many of them are alarm or contact calls.—BARBARA K. SNOW, *Old Forge, Wingrave, Aylesbury, Bucks, England*. Accepted 16 January 1974.