

OCCASIONAL PAPERS OF THE MUSEUM OF ZOOLOGY

LOUISIANA STATE UNIVERSITY

BATON ROUGE, LOUISIANA

GEOGRAPHIC VARIATION IN THE SCRUB EUPHONIA

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The Scrub Euphonia (*Euphonia (Tanagra) affinis*) occurs from southern Tamaulipas and southern Sonora south through the lowlands of Mexico and Central America to northwestern Costa Rica. It is less common in more mesic, heavily forested habitats. The northwestern population of southern Sonora south to Guerrero and inland to western Durango and Jalisco was described as a distinct species, *Euphonia godmani* Brewster, 1889. The nominate form, *E. affinis* (type locality Realejo, Nicaragua) has to date been considered to occupy the rest of the species range.

In preparing a paper on the avifauna of the southern Pacific lowlands of Guatemala, material available in the American Museum of Natural History (AMNH) was first compared with the larger series of Mexican specimens in the Delaware Museum of Natural History (DMNH). It was soon apparent that:

1. Adult males except for those of *godmani*, which have white undertail coverts, are elsewhere remarkably uniform and are of little value in a taxonomic study. They unfortunately predominate in most collections.
2. Adult females from the Pacific lowlands from Guanacaste, Costa Rica to Chiapas are quite uniform.
3. There is a remarkably distinctive undescribed form in Veracruz, Mexico, one of the most intensively studied areas of Central America.

To analyze further the geographic variation in the species, a total of 106 specimens of females from throughout the species range was assembled.

EUPHONIA AFFINIS GODMANI Brewster. Auk, 6:90, 1889. Type locality: Mazatlán, Sinaloa, Mexico.

Diagnosis.—Females grayish olive above with forehead and rump yel-

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lowish olive to bright olive-green; yellowish olive on breast, paler on belly with whitish lower belly and crissum. Definitive plumaged males also have a white crissum. In both sexes the feathers of the crissum may be narrowly edged with yellow, but are never entirely yellow as in *affinis*.

Range.—From the southeastern lowlands of Sonora south to Guerrero.

Remarks.—*E. godmani* was recognized as a full species by Hellmayr (1936), van Rossem (1945) and Eisenmann (1955). Blake (1950) provided a comparison of the characters of the *godmani* and *affinis* and suggested that there was no basis for retaining *godmani* as a separate species. It was considered, without comment, as a subspecies of *affinis* by Miller et al. (1957) and Storer (1970). Blake found *godmani* to be larger than *affinis*, to have a reduced "frontal band," to have slightly bluer head iridescence, to have a white (sometimes edged with yellow) rather than entirely yellow crissum and to have a white spot on the inner web of the third lateral rectrix. The size difference is minimal. The mean and standard deviation for wing chord measurements for 12 definitive plumaged males from Costa Rica, Nicaragua and Honduras and for 10 of *godmani* are 53.4 (s.d.=1.4), and 55.7 (1.5), but 14 males from Guatemala are intermediate: mean 54.6 (1.3). An additional character is the amount of black on the outer rectrix. In *affinis* the black extends across the entire tip of the inner web, while in *godmani* the white of the inner web reaches the posterior edge of the feather (Fig. 1).

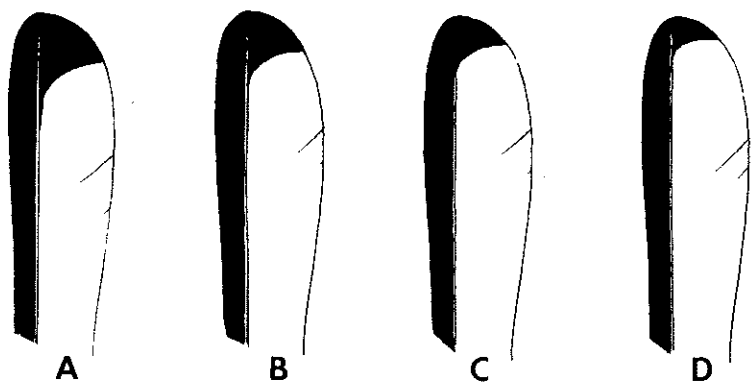


FIGURE 1. Outer rectrices of males from four populations of *Euphonia affinis*: A, *E. a. affinis*, Costa Rica (AMNH 392749); B, C, intermediates from Guerrero, Mexico (DMNH 33844, 33842); E. *a. godmani*, Nayarit, Mexico (USNM 156129).

Fifteen specimens are available from central southern Guerrero (14 DMNH, 1 USNM). They are variably intermediate between the two forms. Three of six females have white crissums, two have yellow crissums and one has white feathers broadly tipped with yellow. Two of 10 males have yellow crissums. The Guerrero males are intermediate in the amount of black on the outer rectrix (Fig. 1). This previously unreported intergradation removes all doubt of the conspecificity of *godmani* and *affinis*.

Specimens examined.—*E. a. godmani*, 8 females. Mexico, Sinaloa - Escuinapa 1, Tabalá (S. of Culiacán) 2, Chele 1; Nayarit - Las Varas 1; Jalisco - El Tuito, south of Puerto Vallarta 2; Colima - 18 km SE [Cd.] Colima 1.

E. a. godmani × *E. a. affinis*, 5 "adult," 1 juvenile females; 8 "adult," 1 subadult, 1 juvenile males. Guerrero - Acahuizotla 4 "adult," 1 juvenile females; 3 "adult," 1 subadult and 1 juvenile males; Amatlán (south of Tierra Colorado), 1 male; El Arenal (east shore Laguna de Tres Palos), 1 male; 3 km SE Chomicotitlán (above Acahuizotla), 1 male; Soyatepec (W of Ocotito) 1 male; El Limón, 1 male.

EUPHONIA AFFINIS AFFINIS (Lesson). Rev. Zool. Paris vol. 5, p. 175. Type locality: Realejo, Nicaragua.

Diagnosis.—Adult females similar to *E. a. godmani* but with bright yellow belly and crissum.

Range.—Pacific lowlands of Oaxaca (north to near Pinotepa) and the Yucatan Peninsula south through Chiapas and Belize, Guatemala, El Salvador, Honduras, and the Pacific lowlands of Nicaragua to northwestern Costa Rica.

Remarks: Brodkorb (1938) described *E. a. esperanzae* from Finca Esperanza, Chiapas, as differing from *affinis* based on adult males being steel blue rather than more purple with underparts paler (less tawny) yellow, and he thought the size averaged somewhat larger. As mentioned above, I failed to see any useful taxonomic characters in definitive plumaged males. Neither could I see any significant variation among females from Costa Rica north to Pinotepa Nacional, southwestern Oaxaca, Mexico.

The 13 females from the Yucatan Peninsula do average slightly brighter yellow on their venters, flanks, and rumps, but individual specimens are lost in the series from Costa Rica. The Yucatan birds also average slightly smaller: Ten have wing chords measuring 49-52.6 (\bar{x} =50.4) as compared to 11 from Costa Rica and Nicaragua 51-55 (52.9). Measurements of the culmen from nostril for 8 and 7 birds respectively, were 4.5-5.3 (4.93) and 4.9-5.6 (5.32).

Some female nominate *affinis* in fresh plumage are duller on the breast

than specimens taken later in the season, but still are brighter, especially on mid-belly and under tail coverts than the following form.

Specimens examined.—Total 78 females. **Costa Rica**, Guanacaste - Bebedero 3, Las Cañas 1, Miravalles 4, Tempate 1, Hacienda Tenoria 1; **Puntarenas** - Cascajal 1; **San José** - El General 1. **Nicaragua**, Matagalpa - Uluce 1. **Honduras** - Lago Yojoa 1; **Cortez** - Cofradia 1; **Olancho** - El Boqueron, Catacamas 1; **Tegucigalpa** - Caliche, Orica 1; **Atlantida** - San Alejo, 10 mi. W Tela 1. **Belize**, Belize Town 3; Pine Ridge near Manatee Lagoon 1; **El Salvador**, Sitio del Niño 1, Sonsonate 1, San Salvador 2. **Guatemala**, Jutiapa - Montúfar - El Paraiso 2; **Santa Rosa** - La Avellana 2; **Escuintla** - San José 1; **Mazatenango** - Finca El Ciprés 8; **San Marcos** - Hacienda California 3, Finca Carolina 1. **Mexico**, **Chiapas** - 9 and 15 km N Mapastepec 6, Pijijiapan 2, Tonalá 1, ca. 21 km SE Tonalá 2, 2 km W and 5 mi. NE Ocozocoautla 3, Las Delicias 4, Ciénega Miramar and Laguna Lagarteros (Guatemala border) 3, 4.4 mi. N Cacahoatán 1, 5 mi S Berriozabal 1; **Oaxaca** - Tehuantepec 3, 16-31 km (by road) N Puerto Escondido 3; **Veracruz** - El Mirador 1; **Yucatán** - Chichén Itzá 3, 18 km N Tizimín 2, Santa Clara 1, 4 km S Progreso 1; **Quintana Roo** - Carrillo Puerto 1; **Campeche** - Champotón 3, Sabancuy 1, Aguada Seca Camp 1.

EUPHONIA AFFINIS OLMECORUM, new subspecies.

Holotype.—LSUMZ 16068, adult female, collected 1.3 miles beyond Ajinche on road to Oviedo in the vicinity of Ebano, San Luís Potosí on 15 March 1950 by Robert J. Newman (prepared by Marcella Newman). Original field number 1636.

Diagnosis.—Underparts and flanks distinctly duller, more grayish olive, less yellow olive than *E. a. affinis*; belly much duller yellow. Dorsally, blue-gray of crown and nape slightly paler; green of rump, upper tail coverts and edges of rectrices duller, less yellow.

Etymology.—Named for the Olmec Indians of the Caribbean lowlands of Veracruz and adjacent areas.

Range.—Eastern lowlands of Mexico from southern Tamaulipas, and eastern San Luís Potosí southeast to northern Chiapas, south in Isthmus of Tehuantepec to about 25 km north of Matías Romero.

Remarks.—The Scrub Euphonia is predominantly a species of rather xeric tropical lowland habitats. It is interesting that this dully colored subspecies occurs in the portions of its range with markedly higher rainfall.

Two females from Alta Mira, Tamaulipas (CM) are dull on the breast but are brighter and more extensively yellow below as in nominate *affinis*.

Three other females from Río Sabinas, Tamaulipas and Micos, San Luís Potosí, however are typical of *olmecorum*.

Specimens examined.—Total 28 females. **Mexico**, **Tamaulipas** - Alta Mira 2 (toward *affinis*), Río Sabinas near Gomez Farías 2; **San Luís Potosí** - 10 mi. E Valles 1, Micos 1, Hacienda Capulín 1, Tamuín "Reg." 1, Ebano and "vicinity" 2, El Sol 1, El Nacimiento del Coy 1, Puente de Dios, Río San Marta 1; **Oaxaca** - 1 mi SE Valle Nacional 2, 8-24 mi N Matías Romero (intermediate toward *affinis*) 3; **Veracruz** - Dos Amates 3 (NE Lake Catemaco) Lake Catemaco 1, Tuxtla Mts., 2.5 km W Cerro Balzapote 1, Ocotal Chico 1, Ojochico 2, 4 mi NW Potrero 1; **Chiapas** ca. 8 km S Solosuchiapa 1.

ACKNOWLEDGMENTS

I sincerely wish to acknowledge Allan R. Phillips whose collection, a large portion of which is now in the Delaware Museum of Natural History (DMNH), contains the largest series of female *Euphonia affinis* available, and who encouraged me to carry out this study. The curators of the following institutions generously loaned specimens: Louis Agassiz Fuertes Memorial Collection, Cornell University; Bell Museum of Natural History, University of Minnesota; University of Michigan Museum of Zoology; Peabody Museum, Yale University; Louisiana State University Museum of Zoology (LSUMZ); Carnegie Museum of Natural History (CM); Western Foundation of Vertebrate Zoology; Moore Laboratory of Zoology, Occidental College; and the U. S. National Museum of Natural History (USNM). David Niles provided unlimited hospitality and access to the facilities of the Delaware Museum. Kenneth C. Parkes, Alan R. Phillips, and J. V. Remsen read the manuscript and offered helpful suggestions. Travel to examine specimens in other museums was supported in part by the Frank M. Chapman Memorial Fund of the American Museum of Natural History. Alice J. Fogg and Musette M. Richard typed the manuscript.

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