

## A NEW SUBSPECIES OF TOUCANET (*AULACORHYNCHUS PRASINUS*) FROM VERACRUZ, MEXICO

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The Emerald Toucanet (*Aulacorhynchus prasinus*), as presently recognized, ranges in montane forests from Mexico to Colombia, Venezuela, Peru, and Bolivia (AOU 1998). Many allopatric taxa exist (e.g., Cory 1919). In the process of a detailed study of this species complex, using specimens from Mexico to Bolivia, I found that an isolated population from the Sierra de Los Tuxtlas in southern Veracruz, Mexico possesses plumage differences that are distinct from other populations. These include characteristics differentiating it from the form with which it has been allied (*A. p. prasinus*, type locality “Valle Real, Veracruz” [= Valle Nacional, Oaxaca; Binford 1989]; Wetmore 1948, Miller *et al.* 1957). Given the distinctiveness of this form, taxonomic recognition is warranted:

***Aulacorhynchus prasinus warneri*,  
 subsp. nov.**

*Holotype.* U.S. National Museum (USNM) No. 359,810; an adult male taken by Melvin A. Carriker, Jr. (No. 782) on 20 April 1940 on Volcán San Martín (1128–1372 m), Sierra de Los Tuxtlas, Veracruz, Mexico.

*Paratypes.* USNM 359,809, an adult female taken 17 April 1940 (914–1219 m; Mexico 764); USNM 359,807, a laying female taken 20 April 1940 (1128–1372 m; Mexico 783); USNM 359,808, an adult male taken 17 April 1940. A fourth paratype, USNM 359,806, another male taken on 20 April 1940, was returned to Mexico in 1943 (*vide* USNM catalogue), but was not found in the national collection of Mexico (CNAV) (searched March 1996 and December 1997) and is presumed to be missing. All of these specimens were taken by Melvin A. Carriker, Jr. on Volcán San Martín, Sierra de Los Tuxtlas, Veracruz, Mexico.

*Diagnosis.* *A. p. warneri* can be most readily distinguished from other subspecies of *A. prasinus* by the yellowish wash to the throat and the moderately bright yellowish band at the white-green interface in the auricular area. *A. p. prasinus* often have a bluish wash to these areas, or they are just white and green. In addition, the blue over the eye tends to be more pronounced in *A. p. prasinus*, and *A. p. warneri* has a decidedly more yellowish cast to its green plumage. *A. p. warneri* is closest to *A. p. virescens* (in which I include *stenorhabdus* [type

loc. Cerro Los Naranjos, Volcan Santa Ana, El Salvador] and *chiapensis* [type loc. Mt. Ovando, Chiapas], considering variation among them to be clinal), but differs from this form in consistently having the yellowish throat and auricular coloration, in having a decidedly wider black crescent area along the sides of the upper mandible, and in having a much greater degree of coloration on the outer margins of the outer primaries (it is more similar in this respect to *A. p. prasinus*). Some *A. p. virescens* do show yellowish plumage in the throat and auricular area, but these few birds are easily separable from *A. p. warneri* by the extent of the yellow suffusion (generally much less in *virescens*) and by the other characteristics noted. There may be differences in soft part colors among the northernmost subspecies of *A. prasinus* (*A. p. prasinus*, *virescens*, and *warneri*), but soft part colors are poorly noted for existing material. In museum specimens, *A. p. warneri* and *A. p. prasinus* show darker skin around the eyes than *A. p. virescens*. *A. p. warneri* females also show mensural differences from these other two subspecies, having shorter tails than *virescens* and *prasinus* (*t*-test,  $P = 0.036$  and  $P = 0.047$ , respectively) and longer bills than *virescens* ( $P = 0.009$ ) (see Table 1). With larger sample sizes, other significant mensural differences seem likely.

*Description of holotype.* Capitalized color names are after Smithe (1974–1981). Throat is white, with a pale Spectrum Yellow (55) wash that deepens posteriorly as the pale throat approaches the green of the neck and upper breast. The majority of the venter is green. The upper breast and neck are between Lime Green (159) and Shamrock Green (162B); the abdomen and flanks are infused with more yellowness, which at its extreme approaches dark Yellow-Green (58). The under tail coverts are between Antique Brown (37) and Amber (36). The ventral surface of the rec-

trices is closest to Blackish Neutral Gray (82), except for ca. 4–20 mm of the tips, which are closest to Mars Brown (223A). With wings closed, the entire feathered dorsal surface is green except for the tips of the rectrices and the primary tips, which extend slightly beyond the green tertials and secondaries. The crown and mantle are closest to a Parrot Green (260), with an infusion of more yellowness on the mantle. The greater dorsum, including the distal edges of the tertials and secondaries, are a darker shade of Shamrock Green (162B); the rump has more vivid yellowish greenness (a combination of Shamrock Green [162B] and Chartreuse [158]). The ends of the tertials and secondaries take on a bluish cast, close to Ultramarine Blue (170A) mixed with the green. This infusion of blue also occurs as the rather Dark Green (262) upper surface of the rectrices approaches the Mars Brown (223A) tail tips. The outer edges of the primaries are Indigo (73) on the outermost, but are Shamrock Green (162B) basally, changing gradually towards Indigo (73) on the distal half. The greater dorsal surface of the primaries is a Blackish Neutral Gray (82), including a very narrow portion of the outer web beside the rachis. On the side of the head there is a slightly bluish cast to the feathers just above the eye; the eye itself is surrounded by bare skin, which is at its greatest width between the eye and the bill. Feathering at the base of the lower mandible begins as white, changing to a rather abrupt vertical band of moderately pigmented Spectrum Yellow (55) before becoming a bright Shamrock Green (162B)/Lime Green (159)/Chartreuse (158) in the auriculars. This yellowish band at the white/green interface occurs from just behind the eye to the throat, becoming less bold ventrally. Carriker referred soft part colors on this specimen to No. 764 (USNM 359,809), given there as “Brown/Ridge olive yellow, maroon basally, rest black/feet olive.” These color notations are attributable to irides/bill/

TABLE 1. Mensural characteristics of *Aulacorhynchus p. prasinus*, *virescens*, and *warneri*. Measurements are in mm, except for mass.

	Mass (g)	Wing chord	Tail	Tarsometatarsus	Bill	Wing tip
MALES						
<i>prasinus</i>						
Mean	190.1	125.4	112.0	32.4	72.0	15.9
Standard deviation	21.35	4.40	4.86	1.39	5.77	2.68
Minimum	170.0	115.6	101.9	29.5	61.2	11.7
Maximum	239.2	135.0	124.4	34.8	83.6	22.8
N	8	34	31	34	34	31
<i>virescens (sensu lato)</i>						
Mean	181.1	123.5	108.5	32.3	70.6	17.3
Standard deviation	19.11	4.50	6.23	1.49	5.75	2.43
Minimum	153.6	113.1	95.9	28.1	58.4	11.4
Maximum	206.0	134.0	122.9	35.8	84.7	24.0
N	5	61	60	61	61	61
<i>warneri</i>						
Mean	—	124.0	111.6	33.3	74.7	17.9
Standard deviation	—	1.50	6.05	1.15	2.90	0.95
Minimum	—	122.5	105.5	32.1	71.8	16.9
Maximum	—	125.5	117.6	34.4	77.6	18.8
N	—	2	2	2	2	2
FEMALES						
<i>prasinus</i>						
Mean	168.7	121.0	106.1	31.7	58.3	15.1
Standard deviation	9.88	3.50	6.20	1.07	4.34	3.15
Minimum	157.0	115.0	98.3	29.4	50.8	9.9
Maximum	180.0	128.7	119.0	33.4	64.8	19.8
N	4	11	11	11	11	10
<i>virescens (sensu lato)</i>						
Mean	172.6	119.7	105.5	31.6	57.4	17.2
Standard deviation	30.06	5.24	6.48	1.50	4.46	2.66
Minimum	135.0	106.4	90.8	27.9	49.1	10.8
Maximum	229.6	130.7	118.1	35.1	71.9	23.0
N	7	56	53	57	57	53
<i>warneri</i>						
Mean	—	117.7	99.1	31.7	63.1	14.9
Standard deviation	—	3.20	4.13	1.38	4.43	1.37
Minimum	—	112.0	92.4	30.0	58.2	13.3
Maximum	—	121.2	104.9	34.0	71.5	16.6
N	—	5	5	5	5	4

tarsi & feet. Color of the skin around the eye is not given, but is a lead gray from memory and from photographs of the species. The ridge of the bill as Carriker described it has not changed remarkably in these skins. It should be added that the lateral surfaces of the upper mandible gradually become Spectrum Yellow (55) basally, and somewhat more yellowish at the tip; this yellow surface is broken by a dark (presumably black) elongate area near the nares, and a long, crescent-shaped dark area (also presumably black) along the quarters of the cutting edge of the upper mandible. A narrow, Spectrum Yellow (55) line occurs around the base of the lower mandible, but the rest is black.

*Variation.* The most diagnostic feature of *A. p. warneri*, the yellowish and yellow plumage in the throat and auriculars, varies in intensity from that shown by the type and paratypes to a lower level shown by one other specimen (Southwestern College, Winfield, Kansas; SWC 2271). In other characteristics they show little variation, even between the sexes. In contrast, throats of *virescens* can show green-white, green-blue-white, or green-yellowish-white. *A. p. prasinus*, with which they are less closely allied, rarely show even faint yellowish throat coloration, being predominantly green-white or green-blue-white.

*Etymology.* This subspecies is named after Dwain W. Warner. Since Dwain's first trip to Mexico in 1941 with George M. Sutton and Olin S. Pettingill he has been an avid researcher of Mexican birds and a strong advocate for Mexico and Mexican ornithology. Dwain introduced many students to Mexico and Mexican birds – including myself, 17 years ago.

*Range.* This form is restricted to the Sierra de Los Tuxtlas, Veracruz, Mexico, where it is another in a series of highland endemics (see

Wetmore 1948, Winker 1997). Although non-migratory, individuals will occur at lower elevations in the nonbreeding season (pers. obs.; cf. Wagner 1944).

*History of the race.* Wetmore (1943) noted the throat and head color differences between the five specimens of this population then available and six specimens of *A. p. prasinus* from elsewhere in Veracruz. Upon finding yellowish coloration in the throat and auriculars of some *stenorhabdus* and *virescens*, however, he attributed these color differences to individual variation, possibly due to age (1943:269). Without further examination, he then allied this population with *A. p. prasinus*, despite the differences he had noted. From his notes, archived in the Smithsonian Institution's Division of Birds, it appears that he worked this out on 17 September 1941 during a visit to the American Museum of Natural History, first considering that the birds from San Martín were undescribed, then changing his mind upon further examination of AMNH holdings. After much more extensive specimen examination, I did not find evidence that this variation is due to age. Nor did I find any *A. p. prasinus*, wherein any yellowish on the throat is rare, that even approached the Los Tuxtlas population in this regard. Further, this population is separable from *virescens* (including *stenorhabdus* and *chiapensis*) based on multiple characters (see above).

Importantly, this new subspecies shows affinities not with *A. p. prasinus*, its nearest neighbor, but rather with populations to the south. This relationship to more southerly populations is a common pattern among the endemic subspecies of Los Tuxtlas (e.g., Wetmore 1941, 1942) and reflects similar plant community associations: the Sierra de Los Tuxtlas contains the northernmost Neotropical rainforest (Andrle 1964, Pennington and Sarukhán 1968). It appears that *A. p. virescens* ancestors colonized Los Tuxtlas from the

south, and that a plumage trait (yellowish throat and auriculars), presently uncommon in *A. p. virescens*, became fixed and enhanced in the now-isolated Los Tuxtlas descendants. Additional indicators of divergence (other plumage characteristics, mensural differences) have also accrued.

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#### SPECIMENS EXAMINED

*Aulacorhynchus prasinus warneri* (7: USNM [4], CNAV [1], CM [1], SWC [1]); *A. p. prasinus* (45); *A. p. virescens* (incl. "*stenorhabdus*" and "*chiapensis*," 118); *A. p. volcanius* (3); other *Aulacorhynchus* "*prasinus*" taxa (405).

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