

GRACE'S WARBLER IN MEXICO

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GRACE'S Warbler (*Dendroica graciae* Baird) can probably claim the dubious distinction of being the least understood of all of the widespread North American wood warblers. It is a typical inhabitant, at all seasons, of pine woods, though scattered pines in oak or oak-juniper woodlands suffice locally for its requirements.

Virtually all standard ornithological works, up to and including the recent (1957) American Ornithologists' Union's *Check-list of North American Birds*, consider this species to have but two continental races, separated in the breeding season by nearly the whole of Mexico. The nominate race is said to breed south only as far as Sonora and Chihuahua, while *D. g. decora* Ridgway is supposed to reach Oaxaca, but no farther northwest. In contrast, Moore (in Miller *et al.*, 1957) states that *D. g. graciae* breeds south along the Sierra Madre Occidental to Nayarit, and also in the "Transverse Volcanic Province east to Mount Orizaba," western Vera Cruz.

Actually, neither of these concepts is correct. It is quite true that Grace's Warbler nests in most of the mountains of western Mexico, south to Michoacan; but farther east in the main body of the "Transverse Volcanic Province" it is only a rare winter visitant. Its breeding range, in these longitudes, is confined to pine forests fronting, or near, the Pacific coast. Thus, if a population really exists on Mount Orizaba, it can be connected with other populations only through Oaxaca, a state inhabited by another race.

We have not seen the material on which the Vera Cruz record is based, and can express no opinion on its validity. Otherwise, the range of the species is apparently more or less continuous along the mountains of western Mexico. The changes that occur from Arizona to Oaxaca are essentially clinal. Adequate series of specimens in fall plumage are at hand from Arizona, Nayarit, and Guerrero. Smaller numbers in fresh plumage from elsewhere serve to outline the ranges of the races, and show the desirability of recognizing by name the Nayarit birds. They may be known as

***Dendroica graciae yaegeri*, subsp. nov.**

Types. Holotype female, adult in fresh plumage, collected by Allan R. Phillips 18 August 1956 on Cerro San Juan, six km (3½ miles) west of the village of Jalisco, Nayarit, Mexico, number 4258 in collection of Allan R. Phillips, and on deposit at Instituto de Biología, Uni-

versidad Nacional Autónoma de México. Eight paratypes in collections of Lewis D. Yaeger (Nos. 389, 390, 468, 469, 482, 483) and Allan R. Phillips (Nos. 4215, 4254); all from Cerro San Juan, west and southwest of Tepic, Nayarit, 12 July to 18 August, 1955 and 1956.

Diagnosis. Similar to *D. g. graciae* Baird, but fresh plumages distinctly clearer grayish, less brownish, on dorsum; less brownish on posterior underparts; throat and breast a brighter, more orangish hue of yellow; adult males with black streaks of back usually narrower. Similar also to *D. g. ornata* Brodkorb, but less bluish on dorsum, the adult males paler and browner, females and immatures more brownish and olivaceous; posterior underparts more buffy; throat and breast a duller, more yellowish hue of orangish yellow; and black streaks of back narrower and fewer in adult males. In size intermediate between these two races: wing average smaller than *graciae* but larger than *ornata*; bill, in lateral aspect, more slender than the latter but slightly more robust than in *graciae*.

Distribution. Breeds, and at least partially resident, in the pine forests of southern Durango, western Zacatecas, western Jalisco, and Nayarit.

Measurements. Twenty-six males from above states, wing (chord) 62-69 (average 64.9) mm.

Twenty male *graciae* from southern Arizona, wing 64-70 (67.0).

Thirty-two male *ornata* from Guerrero, Oaxaca, and Chiapas, wing 57-65 (61.6).

Remarks. We take pleasure in dedicating this handsome bird to Lewis D. Yaeger, in recognition not only of his unfailing help and guidance in Nayarit, and of the fact that he collected the first specimens seen by us and the bulk of the fresh series available, but also of his assistance to Phillips in work in Arizona and Sonora.

Males of all races of this species differ from females by their broader, blacker streaking above and on the flanks and less brown coloration, as was pointed out by Ridgway (1902) for true *D. g. graciae*. Therefore, females of *D. g. graciae* differ from *yaegeri* more than do males; and most females may be distinguished even in summer. Many males appear indistinguishable in general coloration by April. Three late-October-to-January males from Nayarit are *yaegeri*, and probably are resident birds. A typical female *D. g. graciae* was taken on the breeding grounds of *yaegeri* in Nayarit, 21 February 1955, and so winter specimens require careful study.

The characters of *yaegeri* emphasize the importance of accurate determination of the age and sex of specimens collected. A large and

exceptionally heavily streaked female of *yaegeri* might easily be confused with a male of *graciae*, though even in this comparison *yaegeri* is apt to be a bit paler, grayer, or less tinged with chocolate-brown.

In view of revisionary studies to be published separately by Webster, we defer further discussion here. Specimens examined in the preparation of this paper are chiefly in the collections of Phillips, Yeager, and the California Academy of Sciences. A few others were seen in the collections of W. J. Sheffler; and of the Instituto de Biología, Universidad Nacional Autónoma de México; Minnesota Museum of Natural History; Southwestern Research Station, American Museum of Natural History; and Western Foundation of Vertebrate Zoology. To the authorities of these collections we express our appreciation. Collecting of specimens for this study was made possible by the Arizona Game and Fish Commission and the Departamento de Caza, Dirección General Forestal y de Caza, México, D.F. Part of Webster's work was supported by a grant from the National Science Foundation.

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