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DISCOVERY OF A NEW VIREO OF THE GENUS NEOCHLOE IN SOUTHWESTERN MEXICO

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On October 8, 1856, a strange vireo of striking and unusual color pattern was taken by Señor Matteo Botteri at Orizaba, Vera Cruz, Mexico. Although the Vireonidae as a family consists of rather uniformly plain or dull-colored birds, here was a new member of the group, brilliant enough in plumage to rival many of the warblers. In the year following Botteri's discovery, Sclater (Proc. Zool. Soc. London, 1857:213) described this peculiar bird from southeastern Mexico as *Neochloe brevipennis*, the sole representative of a new genus.

Sumicrast (Mus. Boston Soc. Nat. Hist., 1, 1869:547), referring to this species, remarks that in the course of many years Botteri was able to procure but very few specimens. Other than the type, the only specimen taken by Botteri that has been reported is the one in the United States National Museum. In his general description of *Neochloe*, Ridgway (Birds, N. M. Amer., pt. 3, 1904:212) provided the rather indistinctive vernacular name of Green-winged Vireo for this species. Alexander Wetmore (letter of April 22, 1943) writes us as follows: "Our single specimen of *Neochloe brevipennis*, No. 38163, has no date on the label. It was catalogued here in 1865 which is the only information that we have about it. We have never received another specimen since, neither has the U. S. Fish and Wildlife Service." From Ridgway's text (*loc. cit.*) it is apparent that the sex of this particular bird is not specified.

A third specimen taken by Don R. Montes de Oca, a well known naturalist of Jalapa, Vera Cruz, Mexico, was obtained by him at that locality and formed part of a series of bird skins sent to Salvin and Godman. They described and figured this bird in their *Biologia Centrali-Americana* (Aves, 1, 1881:205; plate 13, fig. 2). In this plate, however, the iris is, without doubt, erroneously colored dark brown, as all later specimens have had the peculiar white eyes which are such a striking characteristic of the species. Likewise the artist has pictured a bird far too plump in form. Salvin and Godman consider this Vireo one of the rarest of all Mexican birds and add that "nothing whatever is recorded of its habits."

In the course of field work at Jalapa in the spring of 1897, Frank M. Chapman encountered this vireo in the temperate zone at 4400 feet altitude in an area of broken forests, brush patches and fields. The locality is one with a never failing supply of rain and fog. He wrote the following account (Bull. Amer. Mus. Nat. Hist., 10, 1898:26): "Three males of this rare Vireo were taken in scrubby undergrowth, two at the border of the woods and one in the more bushy growth of an old field. Their song is short, and in character is sufficiently like the notes of *Vireo noveboracensis* to enable one to recognize the singer as a Vireo before seeing it. The iris is white." Chapman's three specimens thus brought the reported take of this species to six, the total for the 84-year period between 1856 and 1940 so far as we know, and his account is the only commentary on the habitat and actions of these birds.

To the veteran field ornithologist Wilmot W. Brown goes credit for the discovery of a second member of the genus *Neochloe*, near Chilpancingo, Guerrero, Mexico, in an area far removed from the two localities in Vera Cruz where all the hitherto known specimens of this genus have been taken. After many years of field work in the country about Chilpancingo and elsewhere in Mexico, Brown on June 21, 1940, took a male *Neochloe* which he at once realized was a bird of much significance and rarity.

He tells of his experiences as follows (letters of May 5 and August 20, 1943): "My specimen was taken at 4000 feet altitude in the mountains near Chilpancingo, Guerrero, Mexico. The locality was a very remote part of a wild, deep canyon where hunter's feet have seldom trod, for this region has the reputation of being extremely rough and precipitous. The bird was collected on the steep slope of the canyon from the top of a tall tree standing among surrounding scattered pines. In foliage the tree had leaves and tiny blossoms scarcely different from the tree you have in California called the Rum or Choke Cherry. It happened at the particular time that I was ensconced in a niche in the canyon-wall watching the opposite side for a possible *Amaurospizopsis relictus*, when two small birds, similar in color, form, size and flight, flew by. Flying closely together they lit simultaneously on the tree-top. Presumably they had been down to the river in the valley, far below, to drink, and returning, had perched to rest prior to continuing their journey up the canyon. Peculiarly there was no water in the higher mountains on this particular date although it was during what is known here as the rainy season. On alighting, both birds had disappeared in the foliage at the top of the tree, which was well up on the other side of the canyon. But presently one of them emerged so that it was silhouetted against the sky. It appeared out of gun-range but I decided to try; so putting in a three inch shell I fired and to my astonishment the bird fell. As the locality where the tree grew was very steep, I was a long time reaching it, being obliged first to find a place that I could successfully climb. On arriving at the foot of the tree I saw my bird lying at the bottom of a drop-off, ten feet below, in a shady spot on a bed of leaves. On reaching this ledge, as I stooped to pick the bird up, I thought 'it's a *Basileuterus*,' but when I opened my hand and saw the strange white eyes and the peculiar coloring of the underparts I realized at once that I had taken a bird that was new to me."

When the specimen was forwarded to Ray with other collections being made for him by Brown in Guerrero, it received special study and now has been compared directly with two of Chapman's specimens, kindly loaned to us from the American Museum of Natural History by Dr. John T. Zimmer. The differences in contrast with the birds of Vera Cruz are several and are so pronounced that even though but a single western specimen is extant it prognosticates existence of a western geographic race which we take pleasure in naming in honor of Mr. Brown. It may therefore be known as the Brown *Neochloe*.

Neochloe brevipennis browni, new subspecies

Type.—No. 3333, Ray Coll., Pac. Mus. Ornith.; male in somewhat worn plumage, taken near Chilpancingo, at an elevation of about 4000 feet, Guerrero, Mexico, June 21, 1940, by Wilmot W. Brown; iris white, bill black, tarsus dusky.

Diagnosis.—Differs from *Neochloe brevipennis brevipennis* of Vera Cruz in shallower and slenderer, yet much longer, bill; culmen less sharply curved; clear olive green extends far up lower back and continues on to lateral scapular area instead of being limited to upper tail coverts and to a diluted wash on tips of a few back feathers; gray of dorsum and especially that of breast paler, deep neutral gray instead of dark neutral gray; white of belly apparently somewhat more extensive laterally.

Range.—Known only from the type locality. Presumably occupies an area in the temperate zone of southwestern Mexico.

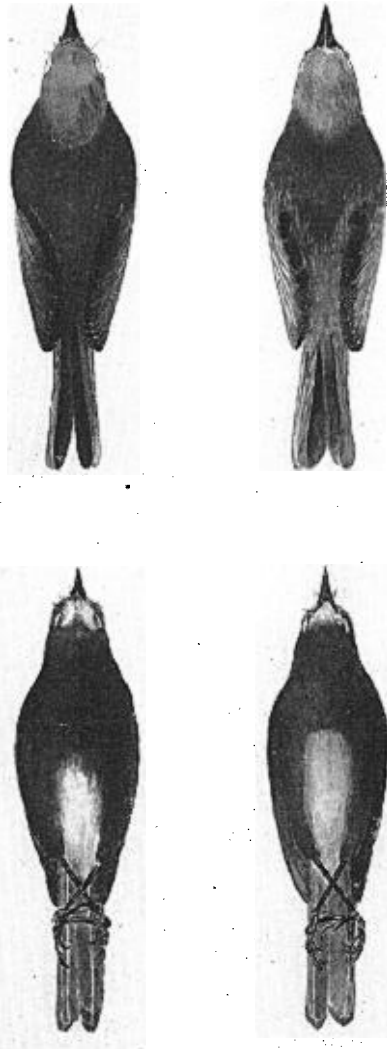


Fig. 7. Left, *Neochloe brevipennis brevipennis*; right, *Neochloe brevipennis browni*; dorsal and ventral views, $\times \frac{1}{2}$; greens of dorsal surface shown as gray. Drawings by Elizabeth Whitfield.

Measurements in millimeters.

	Wing	Tail	Culmen from base	Bill from edge of nostril	Bill depth, maximum	Bill width at nostril	Tarsus	Middle toe	Hind toe
Type, <i>N. b. browni</i> , Ray Coll., P.M.O. 3333	57.8	56.0	11.2	7.0	3.3	3.1	19.8	7.5	6.6
<i>N. b. brevipennis</i> , A.M.N.H. 153304	57.8	56.0	10.5	6.5	3.6	3.3	19.6	7.3	6.9
<i>N. b. brevipennis</i> , A.M.N.H. 153303	56.5	52.5	10.2	6.6	3.5	3.4	19.5	7.2	6.6

Dimensions of other specimens as reported in the publications cited, wherever they are comparable or can be converted into the metric system, bear out the picture derived from these three sets of dimensions. There is no indication of significant differences in measurements of wing, tail, and foot. However, the differences in bill are borne out. Ridgway reports an exposed culmen of 9 for both no. 38163 U. S. Nat. Mus. (sex?) and no. 68582 Amer. Mus. Nat. Hist. The comparable measurement of *browni* is 10.8, and for the two *N. b. brevipennis* at hand, 9.7 and 9.8. Salvin and Godman's measurement of the de Oca specimen (sex?), from tip of bill to rictus is about 14.0 mm.; U. S. Nat. Mus. no. 38163 is 14.2 (Baird, Rev. Amer. Birds, 1866:372); *N. b. brevipennis* at hand, 14.6, 14.9; *browni* 15.5. Furthermore the Salvin and Godman plate shows a short heavy bill in the de Oca specimen like the Vera Cruz birds we have examined.

Question has entered our minds, as it may well those of others, about the characteristics of plumage of *browni*. Their departure from those of *N. b. brevipennis* can scarcely be regarded as seasonal variation, since comparisons have been made between males taken in spring. But, may not the specimen of *browni* display a first-year plumage heretofore unknown in the species?

First-year plumages are differentiated little or not at all from those of adults in the Vireonidae so that we might not suspect such a condition in *Neochloe* which could account for the coloration of *browni*. On the other hand *Neochloe* is a distinctly aberrant vireo with respect to color pattern and may not correspond to its relatives in plumage sequence. The coloration of *browni* is what one might expect in the uplands of Guerrero, an area certainly less continually humid than the habitat of *N. b. brevipennis* in Vera Cruz. There is thus a strong presumption favoring the idea that the coloration of the type of *browni* represents a racial character, an adjustment to environmental conditions, and not a heretofore unknown age variation. Nonetheless this problem remains to be settled. Were it not for the very positive differences in bill size and shape which accompany the striking plumage differentiation, we would still have hesitated to describe this form based on a single specimen. (Morphologically *browni* is as distinctive as some full species and in an earlier period of taxonomy would probably have been described as such.) Over 40 years have elapsed between the taking of Chapman's and Brown's specimens of *Neochloe*. We are likely, therefore, to have only a limited knowledge of this genus for some time to come. Progress should be reported without undue delay. Brown's specimen indicates two new things: (1) an important extension of geographic range for the species and (2) geographic variation within it, even though all the details of this variation are not yet fully known. It may be pointed out that the females of both forms remain undescribed.

Well acquainted with Mexico through long residence, Brown thus contrasts the habitats of the two forms of *Neochloe* (letter of July 18, 1943): "Chilpancingo is not only a long distance from Jalapa, where most of the examples of *Neochloe* have been collected, but (and much more important) the climate and character of the surrounding country are so entirely different. Chilpancingo is in open country with corn fields and cattle ranches and has a dry (except during the rainy season), semi-cool and very windy climate. The foothills are covered with brush and a scrub-growth of trees, while farther back rise the mighty Sierra Madre del Sur with their dark belt of pines silhouetted against the sky.

"Jalapa, on the other hand, has a warm, humid climate, for when the moist-laden clouds from the Gulf impinge on the mountain tops above they condense under the influence of the cool air and precipitate on the town below. In the region about Jalapa are coffee, tobacco and banana plantations and in the forests orchids are to be seen on the trees and these with graceful tree-ferns, and flowers in great profusion, add huge blotches of color to the landscape. The mountain slopes are well forested and the

ravines, particularly, are choked with luxuriant tropical vegetation, making collecting, at times, exceedingly difficult."

Referring to the climate of the Chilpancingo area, Brown explains that this is divided into the two seasons, wet and dry. In his letter of May 28, 1943, he writes: "The rains are now beginning; there is water in the river bed which looks strange as it has been dry for so many months." On June 27, 1943, he says: "It is now the rainy season here; the mountains look very beautiful, the trees are heavy with foliage and everything is fresh and velvety green and wild flowers of many varieties and colors are growing in profusion along the mountain trails. The river is a rushing torrent; too noisy to collect near. Last season, at one place, it rose above some of the tree-tops as debris deposited on the higher branches well attested long afterward."

From these and other excerpts from his letters it will be seen that the rainy season extends from June to November. Brown's notes also show that the taking of the lone specimen of *Neochloe brevipennis browni* was dependent on three fortunate factors: favorable weather conditions during the rainy season, continual combing of a wide area of precipitous mountain-sides by a tireless and long-experienced field ornithologist, and lastly extremely good marksmanship on the part of Mr. Brown himself.

Museum of Vertebrate Zoology, Berkeley, and Pacific Museum of Ornithology, San Francisco, California, January 7, 1944.