

On the Field Identification of Yellow-green, Red-eyed, Philadelphia and Warbling vireos

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*Analysis in the field and in
the museum suggests that some
"standard" field marks must
be approached with more caution*

The family Vireonidae comprises approximately 40 species of small- and medium-sized, primarily insectivorous birds. Included in this family are the vireos (*Vireo*), the shrike-vireos (*Vireolanus*), and the greenlets (*Hylophilus*). Of this group, only 13 species (all vireos) have occurred in North America. Five of these species lack conspicuous plumage characteristics such as wingbars, eye-rings or tail spots, but possess noticeable superciliary complexes. Included in this group are the "Yellow-green" Vireo *V. flavoviridis* or *V. olivaceus flavoviridis*, the Red-eyed Vireo *V. olivaceus*, Warbling Vireo *V. gilvus* and the Philadelphia Vireo *V. philadelphicus*.

Although the A.O.U. checklist (1957) and various authors (Godfrey 1966, Binford 1968, Oberholser 1974, Peterson 1980, et cetera) have treated *V. flavoviridis* as a separate species, many other authors have considered it conspecific with *V. o. olivaceus* (Mayr and Short 1970, Morony *et al.* 1975, de Schauensee and Phelps 1978, Garrett and Dunn 1981, et cetera). The forthcoming 6th Edition of the A.O.U. checklist will reportedly also treat it as conspecific. However, *olivaceus* and *flavoviridis* might best be considered as allopatrically breeding semispecies or as a superspecies (in the sense of Grant 1977).

A generalized summary of the distribution of these vireos is as follows. The Red-eyed Vireo "replaces" the Yellow-green Vireo in deciduous forests from central Texas across most of North America, excluding the southwestern United States, during the breeding season. The Yellow-green type is primarily a neotropical-subneotropical population, breeding from northern Sonora, Nuevo Leon, and

Tamaulipas south into Panama. Both types winter primarily in the Amazon Basin. The Philadelphia Vireo breeds in Canada west to central-eastern British Columbia, south to North Dakota, northern New Hampshire and Maine. The winter range is from Guatemala south to Panama and northwestern Colombia. The Warbling Vireo breeds across most of southern and western Canada south throughout the United States into northern Mexico (including Baja California) and winters from northern Mexico south into Guatemala and El Salvador.

Vagrant Yellow-green Vireos have reached California eleven times (McCaskie *et al.* 1979, Garrett and Dunn 1981) and even Canada (Godfrey 1966). The southern portion of the Rio Grande Valley might be considered the extreme northeasterly limit of the bird's normal range; however, it is quite rare as a breeder there. Additionally, there is a record for southwestern Texas (Oberholser 1974).

Red-eyed Vireos are rare transients only in the southwestern United States. Elsewhere in North America they are common migrants. Red-eyed Vireos have reached Europe (Bruun 1970).

Philadelphia Vireos are regular transients primarily in central and eastern North America. This species is a casual vagrant in the southwestern United States where, for example, it is a rare fall vagrant in California, Arizona and New Mexico (Garrett and Dunn 1981, McCaskie *et al.* 1979, Monson and Phillips 1981, Hubbard 1978), and a very rare spring vagrant in California (where there is also a mid-winter record).

Most of the potential for misidentification arises in the fall. All the vireos under discussion acquire alternate plumage via wear from the winter plumage, which in turn was acquired by a complete prebasic molt. The fresh fall plumage is brighter, especially the yellows and greens. The birds proceed to appear duller with wear through time. Additionally, birds in their first plumage after their complete post-natal molt can further increase identification difficulty due to plumage similarities not dealt with in the standard field guides.

In fall it is possible to run across very green and yellow Warbling Vireos. Sometimes these individuals also have a contrasting gray pileum and relatively bold superciliary complex. Therefore, confusion with both Red-eyed Vireos and Philadelphia Vireos is possible. This potential difficulty is further enhanced by individual variation among members of all three species.

Another potential identification problem arises when dealing with Yellow-green and Red-eyed types in the fall. It is this problem that will be dealt with first.

Adult Red-eyed Vireos have the most contrasting superciliary "complex" of the vireos lacking wingbars. The mouse-gray pileum contrasting with a whitish superciliary and separated from it by a thin blackish-gray line, the dark brownish-gray or blackish lores, and the dark post-ocular stripe all contribute to this effect. Of course, if the iris is reddish, this will eliminate all others but the Yellow-green Vireo. The facial pattern is further accentuated by a dark greenish-brown auricular area (which adds to the superciliary's distinctness). In general the upperparts are uniform greenish-brown to greenish-yellow, thus contrasting with the gray pileum. In the breeding season and spring, the underparts may be washed with greenish to dull yellow on the sides and flanks, often to brighter yellow on the undertail coverts on an otherwise dull white background.

It is often assumed that the upperparts of Yellow-green Vireos are more yellow than those of the Red-eyed Vireo. While this may be generally true, it is not without exception. Individuals from both populations with virtually identical upperparts

could be found in most collections examined (fig. 1). The shade of the upperparts should not be considered a reliable character in the identification of any of the species considered here, as considerable overlap occurs among all of them.

The pileum is usually duller in the Yellow-green Vireo (more greenish), than the darker gray of the Red-eyed Vireo. However, this character showed overlap between specimens of hatching-year Red-eyed Vireos and specimens of Yellow-green Vireos. Additionally, the eyeline of some young Red-eyes can be very dull (grayish) and the eyeline of Yellow-greens can approach the darkness of these birds. Thus, the duller head pattern often cited for the *flavoviridis* group is not always useful.

The yellowish wash on the underparts of some Red-eyed Vireos occupies an area nearly equal to that of some Yellow-green Vireos, being brightest on the sides (especially near the bend in the folded wing), flanks and crissum. In the fall, Red-eyes can appear much like the field guide rendition of Yellow-green Vireos (Peterson 1961, Robbins *et al.* 1966), and the statement in Peterson indicating that the yellow on the undertail coverts is an identifying characteristic is certainly misleading (Peterson 1961, p. 248).

It appears that there are several characters useful in separating these two large vireos: (1) The bill of the Yellow-green is almost always noticeably longer and deeper with a much more extensively pale mandible. (2) The shade of the yellow on the underparts. In *flavoviridis* this color is consistently a bright lemon or sulphur yellow. In *olivaceus* the yellow can be relatively bright and extensive, but the color tends toward a buffy or greenish yellow. (3) If the yellow wash extends across the breast, it is a Yellow-green (this does not, however, occur on all Yellow-greens). (4) If the yellow of the sides extends up onto the sides of the neck or face (even to the auriculars) the bird is a Yellow-green. This area is consistently greenish or greenish-gray in Red-eyes. (5) Finally, the edgings on the remiges are yellow in *flavoviridis* rather than greenish, grayish, or greenish-white in *olivaceus*. The inner and the outer webs of the rectrices are yellowish and the inner webs of the primaries and outer webs of the secondaries and tertials are emarginated with yellow in the Yellow-green Vireo. This often contributes greatly to the impression that the birds are brighter green in the upperparts than the Red-eyed. The yellow in the tail is especially noticeable from the underside, and should be used when identifying extralimital Yellow-green Vireos.

Warbling Vireos are portrayed in the field guides as drab uniform grayish vireos with little color or contrast anywhere in the feathering. Although Warbling Vireos can look like this, it is not a valid generalization. This species can be very green on the upperparts, even contrasting with a grayish pileum (especially in *V. g. swainsonii*, and *V. g. petrorus* [Oberholser]). This green area can be especially bright on the uppertail coverts. Warbling Vireos can also be very yellow on the underparts, especially on the undertail coverts, and although less frequently, on the sides and flanks, and very occasionally across most of the underparts. Some Warbling Vireos even appear to possess a relatively bold superciliary. Thus, there is potential for confusion with the other vireos generally considered to be more green and yellow than the Warbling.

Fall birds may present some confusion when comparing bright Warbling Vireos to hatching year Red-eyed Vireos. Warbling Vireos can appear large, greenish on the upperparts, yellowish on the underparts and grayish on the pileum. Although any dark on the lores is usually obscured or absent, Warbling Vireos can have mousey-gray or gray-brown lores. There is a lot of individual variation with respect to the post-ocular stripe, which can be relatively dark in some birds. Birds with the above



Figure 1: From left to right (1) *V. philadelphicus* imm. female, Calif. Ac. #40850, 3 Sept 1906, Lyons Cook Co., IL; (2) *V. gilvus swainsonii* male, Calif. Ac. #40867, 24 Sept 1903, Santa Monica Mts., Los Angeles Co., CA; (3) *V. olivaceus* male, Calif. Ac. #53451, Deerfield, Lake Co., n.e., IL, 13 Sept 1914; (4) *V. flavoviridis* male, Calif. Ac. #27842, 16 May 1925, Maria Madre, Mexico. Note that there is very little difference in the shade of the upperparts among all four vireos. The birds were photographed against a neutral gray background. The yellow edging in the rectrices is apparent in the Yellow-green Vireo.



Figure 2: Hand-held Philadelphia (left) and Warbling (right) vireos. Note the generally stubbier appearance of the Philadelphia Vireo as a result of the relatively shorter bill and tail. Also note the length-of-tail to length-of-undertail-coverts ratio difference between the two species. See text for further discussion. Photos courtesy of Elisabeth Phinney.

characters, especially when a darkish pileum sets off a whitish superciliary, are sometimes misidentified. As mentioned earlier, hatching year Red-eyed Vireos can show less distinct dark lines between superciliary and crown, sometimes nearly invisible in the field. If a dark line is present there, however, then the bird is not a Warbling Vireo. Red-eyes always show darker, bolder lores and a darker post-ocular stripe. Additionally, the dark greenish or greenish-brown auriculars contrast with the much paler throat, sides of the neck, and the superciliary complex in the Red-eyed Vireo, whereas in the Warbling Vireo there is often little difference in the coloration of cheek area and the sides of the neck and nape. It should be pointed out that the above criteria need be used only on hard-to-identify birds. In general, Red-eyed Vireos are larger, longer winged, larger-billed, much greener overall, and possess a much bolder superciliary complex. The observer does, however, need to be aware of the variation in these birds, and caution is due in making (especially extralimital) identifications of some individuals based upon field guide criteria.

Bright Warbling Vireos can be confused with Philadelphia Vireos as well. Typically, the Philadelphia Vireo plumage contains a unique, extensive warm yellow (generally strongest on the breast). This yellow is unique to this species (for good representation of this color, see Peterson 1961, or Godfrey 1966). Philadelphia Vireos are shaped differently from the other vireos. They are chunky, round-headed vireos with relatively short tails and bills (fig. 2). Thus they give a distinct impression related to these features. Only this species possesses strong yellow on the throat (not all birds, but especially prevalent in hatching year birds). Difficulties arise with bright Warbling Vireos and with rather yellow Red-eyed Vireos in fall. Although Philadelphias are generally smaller than either of the other species, there is size overlap with both Red-eyed and Warbling Vireos (Ridgway 1904). As mentioned earlier, there can be overlap with all three species with respect to back color and pileum color (fig. 1). This is especially true with respect to hatching year Philadelphias, which possess olive or dull greenish gray pileum, quite close to the shade of this area on many Warbling Vireos.

Some Warbling Vireos can appear yellowish on the entire underparts, but this is usually a dull yellow on the breast and throat, and is very different in shade from the warm yellow of the Philadelphia, and is never as bright as in the Philadelphia on the breast and throat. In general, there is a greater degree of dark coloration in the lores of the Philadelphia, and the post-ocular stripe is often wider just behind the eye (fig. 2) than in Warbling or Red-eyed Vireos, often being as wide as the eye in this area. This, in combination with the short bill, rounded head and dark lores, gives the Philadelphia Vireo a distinctive "facial expression" unlike the other species. This distinctiveness is further enhanced in some individuals by a *relatively* extensive light area under the eye.

There is disagreement as to the degree of difference in scold notes or "whines" of these vireos. The experienced observer will probably want to give attention to this aspect of identification as well.

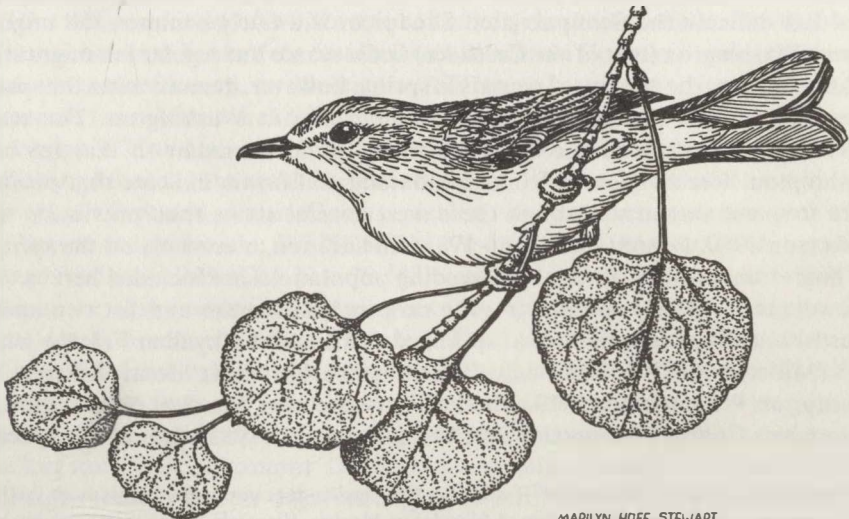
Field identification is a continuously changing, growing process. It is hoped that this article will contribute to that process with regard to these species of vireos.

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