On Separating Female and Immature *Oporornis* Warblers in Fall

Figure 1. Typical immature Connecticut Warbler, caught 12 October 1987 on Southeast Farallon Island, California. The eye ring is characteristically very full; note also the buffy throat, heavy brownish cast to the breast and upperparts, and dingy yellow underparts that enable easy separation from the other *Oporornis*, including Mourning Warblers with full eye rings. The dingy plumage of this bird, along with the measured wing length and incompletely pneumatized skull, suggests that it is an immature female.

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Southeast Farallon Island is perhaps the best place in North America to study the field separation of difficult-to-identify, passerine sibling species. Nowhere else do so many eastern and western land-bird migrants regularly mingle, and by capturing most of them for banding we are given the opportunity to study them up close, measure them, and augment our understanding with information on their age and sex. The island’s open terrain especially favors the detection and study of typically skulking species, such as the *Oporornis* warblers, which we often find foraging on the island’s barren slopes. Perhaps this is the main reason why we have recorded thirty-six Mourning Warblers (*O. philadelphia*) and thirty-two Connecticut Warblers (*O. agilis*) on Southeast Farallon, representing over 50 percent of California’s records of these species.

Our understanding of the field identification of fall immature *Oporornis* warblers (i.e., birds in first basic plumage) has steadily developed since the Point Reyes Bird Observatory began daily monitoring of land-bird occurrence on the island in 1968. We have had little trouble distinguishing Connecticut Warblers by their dark eye rings, duller plumage, chesty appearance, and habit of walking rather than hopping. But it was not until 17 to 26 September 1974, when we documented our first five Mourning Warblers, that our ability to separate immatures of this species from MacGillivray’s Warblers (*O. tolmiei*) began to improve. As with other geographically separated sibling species, treatment of fall immatures of these two in the field...

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Figure 2. Connecticut Warbler, Southeast Farallon Island, 21 September 1987. The very full eye ring, dark throat, and greenish upperparts, along with a completely pneumatized skull, indicate that this is an adult female.

Prompted by Allan Phillips (1947), Wesley Lanyon and John Bull (1967) published a paper in Bird-Banding indicating that most Oporornis warblers could be identified by the flat-wing length minus the tail length. They found this calculation to be 2 to 11 mm in MacGillivray’s, 10 to 18 mm in Mourning, and 19 to 27 mm in Connecticut. Although these specimen-based calculations may differ slightly from those of live birds (we have found smaller ranges and less overlap on live birds measured on Southeast Farallon), this paper enabled us to identify most fall immature Mournings that we captured. These flat-wing/tail differences, however, are of little value in the field.

In documenting the first California Mourning Warbler in 1968, Guy McCaskie (pers. comm., 1970) observed that this immature bird’s throat was yellow, which differed from the typical whitish or grayish-buffy throat coloration of an immature MacGillivray’s. In 1974 we confirmed this difference on Southeast Farallon, and throat color subsequently became the popular standard used in separating Mourning from MacGillivray’s in first basic plumage. Recently, however, exceptions to this standard began to appear on the island: dull MacGillivray’s with yellow throats and a probable fall adult female Mourning with a white throat. We had to find other indicative plumage criteria. As the records of Mournings increased, we developed a good understanding of the differences in the color, width, extent, and abruptness of the eye rings of the two species. We now feel that we can separate most birds by using just throat color and eye-ring features, and close to 100 percent of the individuals by using a combination of all plumage characters.

The purpose of this article is to discuss and illustrate with photographs of hand-held birds differences in the plumage of fall female and immature Oporornis warblers. We do not intend it to be an exhaustive treatment of the subject. We wish only to make observations that have not been widely published in the field-identification literature, in hopes of stimulating further discussion and, hence, advancement in our understanding of this topic.

Aging and Sexing Fall Oporornis

The accurate aging and sexing of birds in the field is always of value, as knowing the age and sex class will often assist with the identification. Understanding the extent and timing of molts is an important starting point. In Connecticut, Mourning, and MacGillivray’s warblers, both juveniles and adults molt on the breeding grounds in July—August—juveniles into first basic plumage (a partial molt) and older birds into definitive basic plumage (a complete molt). The prealternate molt is partial (body plumage only) and takes place on the wintering grounds in February—April. In the field, the first alternate (first spring) plumage of males is similar to the definitive alternate plumage.
In males, the definitive basic (adult nonbreeding) plumage appears very similar to the definitive alternate (adult breeding) plumage; these birds are easily separated from the other age and sex classes in fall by their extensive dark hoods and are identified to species by the extent of their eye rings (but see Pitocchelli [1990] for recent documentation of occasional adult male Mourning Warblers with partial eye rings that are usually "weaker" than those found in MacGillivray's). The field separation of the other three age and sex classes in fall is not as easy and should not be attempted with all individuals.

The least understood plumage in Oporornis is that of adult females in fall (i.e., birds in definitive basic plumage). In MacGillivray's this plumage may be impossible to distinguish from that of immatures (i.e., birds in first basic plumage), although if it resembles the alternate plumage of spring, the throat might be distinctly whiter than the dingier grayish-white, buffy, or yellowish throats of immatures. In Connecticut, the eye ring probably averages whiter and thicker in adult females (being often thinner and slightly buffy in immatures), the upperparts may be greener, and the throat may be darker, but these characters are yet to be fully tested. Most references and field guides indicate that adult female Mourning Warblers in alternate plumage have a pale gray or white throat (but see photo of a "breeding female" in the Audubon Society Master Guide to Birding, v.3, p.173). If the definitive basic plumage is similar, the white or gray throat would distinguish them readily from the yellow-throated immatures. The extent of variation in the plumages of fall adult female Oporornis warblers, especially as related to throat color, has yet to be determined, however.

The sexing of immature Mourning and MacGillivray's warblers in fall is also problematic, with much overlap in plumage features. Immature males of all three species of Oporornis have, on average, a more extensive and darker gray suffusion to the crown than do immature females, but there is a good deal of overlap in this character. It may be impossible to sex immature Connecticut Warblers on plumage alone. Many immature male Mourning and MacGillivray's warblers in basic plumage have a few black feathers on the upper breast and on this basis are separable from the other age and sex classes. Immatures that lack these black feathers may be of either sex; in MacGillivray's, look for grayer tones to the head, breast, and lores of immature males versus the more buffy-washed head, breast, and lores in females; and in Mourning, look for darker and more distinct grayish breast patches on males than on females, occasionally forming a complete breast band.

In sum, there is much overlap in plumage characters useful in aging and sexing immature and female Oporornis warblers, and many individuals should be left uncategorized when viewed in...
the field. In the hand, aging and sexing of *Oporornis* is greatly aided by wing and tail measurements, the extent of pneumatization of the skull, and the relative shape and condition of the flight feathers, which are retained by immatures but replaced by adults during the prebasic molt. When these criteria are combined with plumage characters, almost all fall birds can be aged, and up to 60 percent of fall immatures can be reliably sexed. The figure captions in this article contain further comments on the age and sex of these hand-held birds. See also Pyle et al. (1987) for more information on aging and sexing *Oporornis* warblers and passerines in general.

**Connecticut Warbler**

Immature and female Connecticuts are readily separated from Mourning and MacGillivray’s warblers by a combination of their thicker, fuller-looking eye rings, larger bills, buffy throats that usually lack yellow, brownish cast to the upper breast and upperparts, and dingier yellow underparts (Figures 1 and 2). In the field they also usually walk when foraging; their posture is plumper than in the other two species, resembling that of the Ovenbird (*Seiurus aurocapillus*) or a *Catharus* thrush; they are longer-winged; and their call note is a slightly higher-pitched *chip* than that of Mourning Warbler and is softer than that of MacGillivray’s. (All three species of *Oporornis* also give a thin *zeet* flight call typical of most warblers.) Although the eye rings of Connecticut Warbler can occasionally be broken (Gustafson 1988), these breaks are much smaller than those found in the eye rings of MacGillivray’s and more abrupt than in those of Mourning (whose eye ring is also distinctly thinner and usually yellower). The throat color in Connecticut can occasionally appear yellowish (Figure 3), but on these birds a broad, suffuse, and olive brownish breast band separates the paler throat from the belly. Although complete breast bands are occasionally found in immature male Mourning Warblers (see Figure 7), they are typically grayer, narrower, and less suffused with pale coloration than those of Connecticuts.

Immature Mourning Warblers with full eye rings can be further separated from Connecticuts by their smaller bills, brighter yellow throats and underparts, and lack of brownish tones to the upperparts. Mournings and MacGillivray’s both usually hop in the field and look thinner and sleeker than Connecticuts.

**Throat Color**

On its own, the presence or absence of yellow in the throat will probably separate 90 percent of Mourning and MacGillivray’s warblers in first basic plumage. Fall immature Mourning Warblers (Figures 4–7) typically have bright yellow throats that usually
continue uninterrupted to the bright yellow belly and undertail coverts. On dull birds the yellow of the throat may be tinged buffy, and small olive or grayish breast patches are often present, but only occasionally are these so extensive as to meet across the center of the breast (Figure 7). We have never caught or seen an immature Mourning on the Farallones without yellow or buffy-yellow in the throat, however, the specimen collection at the Louisiana State University (LSU) Museum of Natural Science contains two immature males and three immature females with buffy or whitish-gray throats that lack yellow (S. Cardiff and C. Marantz, pers. comm.). (These birds were considered atypical of the large series of specimens of yellow-throated immatures found at LSU.) Furthermore, on 30 August 1988, we captured what we believe was an adult female Mourning Warbler with a bright white throat (Figure 8). This character may or may not be typical of this age class in fall (see above and Figure 9). But the need is clearly demonstrated to look at other features before assuming that every white-throated bird is a MacGillivray’s.

The throat of immature MacGillivray’s Warblers is usually whitish or grayish-white and well defined by a suffused dusky-gray band across the breast, which contrasts distinctly with the yellow belly and undertail coverts (Figures 10 and 11). The throat of immatures is usually somewhat dingy, while that in fall adult females may be white (Figure 12). We have captured at least three MacGillivray’s in the past five years, however, with dingy to moderately yellow throats, and we believe that this may be a somewhat regular attribute, possibly unique to immature females. The yellow on the throats of these individuals (Figures 13 and 14) is dingier or buffier than on most immature Mourning Warblers, and the amount of dusky or dingy-brownish across the chest seems more extensive and suffused than that found in Mourning (compare with Figure 7). We have not, for instance, seen a MacGillivray’s...
with the extent of yellow illustrated for the immature female of this species on page 371 of the *National Geographic Society Field Guide to the Birds of North America* (first edition; correctly modified in the second edition). We believe, though, that individual variation within these two species may cause there to be some overlap between them in throat color and the extent of the breast band.

**Eye-ring Features in Mourning and MacGillivray’s Warblers**

The combination of the width, extent, abruptness, and color of the eye ring is unquestionably the most reliable criterion for separating fall immature Mourning and MacGillivray’s warblers in the field. In Mourning the eye ring varies quite considerably, but it is always thinner and more extensive and is usually whiter or yellower than that of MacGillivray’s. Figures 4-7 and 15 show the range of variation in fall immature Mourning Warbler eye rings—from quite indistinct, to distinct but broken, to almost full—but always thin and usually yellowish in color. Note also that the breaks lack the abruptness of the breaks in MacGillivray’s and Connecticut (when present). In adult females, the eye ring, when present, can be whiter, but is still narrow and fairly complete (Figures 8 and 9).

In contrast to that of Mourning Warbler, the eye ring, or “eye crescents” or “eye arcs,” of MacGillivray’s Warbler shows little variation. Even in the dullest of birds it is noticeably broader, more abbreviated, and whiter than the eye ring of Mourning (Figures 10-13). The ends of the crescents are also abrupt, unlike the tapered or indistinctly defined ends to the arcs on Mournings. Although some birds of both species may have eye marks tending toward those of the other in appearance (compare Figures 14 and 15), we
believe that there is little if any overlap in this feature.

**Other Criteria Used to Separate Mourning from MacGillivray’s Warblers**

To the trained ear, the call notes between Mourning and MacGillivray’s warblers differ. The note is usually described as a sharp *tsic* in MacGillivray’s, drier and sharper than the more wren- or yellowthroat-like *chrip* of Mourning. This character may be of use, however, only when the observer is familiar with both. The relative length of the undertail covers is also useful in the hand, as they generally extend more than halfway along the tail in Connecticut about half-way or a little more than that in Mourning, and less than half-way in MacGillivray’s. There is overlap in this feature, however, and it is usually difficult to assess this character in the field.

We have noticed a few other features that may be of use in separating Mourning from MacGillivray’s warblers. The sides of the
breast and flanks (posterior to the breast patches) seem to be a clear, bright yellow in immature and female Mournings, whereas they are often washed with olive in MacGillivray's, creating a dingier appearance. This difference is illustrated for the immatures on page 37 of the National Geographic Society Field Guide (both editions), but it is not discussed in the text. Immature Mournings and MacGillivray's often, but not always, have a pale supraloral stripe (Figures 8, 10, 11, 14, and 15). We have observed that this stripe occurs more often in Mournings than in MacGillivray's (and is rarely, if ever, found in Connecticut); it also tends to be yellowish in Mourning but whitish or Buffy in MacGillivray's. And finally, we have noticed that MacGillivray's seem to exhibit a slightly jerkier, bouncier behavior and may have a slightly larger-headed posture than do Mournings; but these latter two characters are so subjective that they would only be noticed after extensive observation under such ideal circumstances as we have on Southeast Farallon.

Summary
To separate fall immature and female Mourning and MacGillivray's warblers we recommend that birders first scrutinize the eye ring, then confirm the identification with the throat color and other features mentioned above. As with any field identification problem, a few individuals, perhaps hybrids, may be difficult to classify (Figure 15), but most will be readily identified.

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