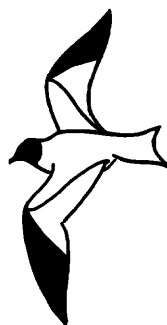


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IDENTIFICATION OF NORTHERN AND LOUISIANA WATERTHRUSHES

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Separation of the Northern Waterthrush (*Seiurus noveboracensis*) from the Louisiana Waterthrush (*S. motacilla*), both in the field and in the hand, presents difficulties that are not adequately treated in either the popular or technical ornithological literature. The purpose of this article is to analyze the published identifying characters in light of my own field and museum experience.

IDENTIFICATION IN THE FIELD

Field separation of Northern and Louisiana waterthrushes is difficult for observers unfamiliar with one or both species. Once experience is gained, however, identification of *most* individuals becomes much easier. Unfortunately, the ornithological literature is confusing and misleading. Field guides vary considerably as to which characters are mentioned or stressed, and none adequately depicts the subtle differences between the two species. Most guides overemphasize the throat spotting, incorrectly describe the eyeline, and fail to mention the flank color. In the present section I will discuss each character in relation to its variability and its usefulness in the field.

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SIZE

Although *motacilla* averages larger than *noveboracensis*, there is overlap in all measurements. The differences in over-all size (as expressed by the lengths of wing, tail, tarsus, and middle toe, and by weight) are so slight that only an expert birder who is very familiar with both species and has an exceptional eye for size could distinguish between even the extremes of the two species.

Bill size is a more useful field character. Compared to the Northern, the Louisiana Waterthrush has a bill that averages longer, deeper, and wider. Thus in the field the bill of the Louisiana appears large in relation to the head size and over-all size of the bird, while that of most Northerns appears "normal." Because of intraspecific variation and interspecific overlap, however, bill size is not diagnostic and can be used only as a minor aid to field identification. See section on *Identification in the Hand* for measurements of culmen and wing.

SUPERCILIARY COLOR

The eyeline of *motacilla* often is described and depicted as pure white throughout its length. Such is not the case at all. That portion of each superciliary from the bill to the anterior edge or middle of the eye is always washed with grayish-olive or grayish-buff and hence is similar to the same portion of the eyeline in *noveboracensis*. The critical part of the superciliary is from the eye back. In *motacilla* this area is a pure, gleaming white, even slightly whiter than the throat and chin, while in *noveboracensis* it is usually buffy-yellow. Unfortunately, in some Northerns, especially western birds in worn spring and summer plumage, the posterior portion of the eyeline may be so white as to be inseparable from *motacilla*. Thus any bird in which this area is yellowish or buffy must be a Northern, while an individual with pure white superciliaries could be either species but more likely a Louisiana. This field mark, then, is helpful in eliminating yellow Northerns (most of the population) and can be used as an additional, nondiagnostic aid in the identification of Louisianas.

VENTRAL STREAKING

The streaks on the underparts of the Louisiana Waterthrush are usually paler (more brownish or grayish and less blackish) and less sharply defined than in the Northern Waterthrush. This paleness in

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Louisianas is due not only to a reduction of dark pigments but also to a resulting condition in which the pale ground color of the underlying feathers is allowed to show through the streaks. The streaking character may be further enhanced by the *typical* difference in ground color of the breast, sides, and belly – white in Louisianas and yellow (thus darker) in Northern. This enhancement is not universal, since the ground color can be quite white in some Northern and slightly buff-tinted (but not yellow) in some Louisianas.

In this streaking character we again see overlap, a few Louisianas being quite as darkly streaked as the palest Northern. Because of this overlap and because the character at best is only relative, rather than absolute, this field mark must be used with caution and only as an additional minor aid.

Chapman (1966: 471-472) indicates that the middle of the belly is streaked in *noveboracensis* and plain in *motacilla*. While it is true that most (perhaps all) *motacilla* have immaculate bellies, so do most *noveboracensis*, the streaked condition in the latter species being the exception rather than the rule.

THROAT COLOR

Field guides often stress that the presence of throat spotting (sometimes incorrectly called “streaking”) in the Northern and its absence in the Louisiana is diagnostic. Such is not the case, since a few Northern have virtually immaculate throats, and some Louisianas have large, well-defined spots (see Fig. 1). However, at close range and at the proper angle of observation, throat spotting can be used as a percentage field character to aid in identification. The ground color of the throat is also useful, although again not diagnostic. In most Northern the ground color is yellowish or off-white; only a few individuals have a white throat. Louisianas, on the other hand, always have pure, gleaming white throats. When a Louisiana is first observed in the field, the white throat and superciliaries stand out as the most eye-catching features, while in Northern the human eye is not immediately attracted to these areas.

FLANK COLOR

By far the best field mark, and the only one that comes close to being diagnostic, is the ground color of the flanks and under tail coverts. In *noveboracensis* this ground color is yellowish, in some

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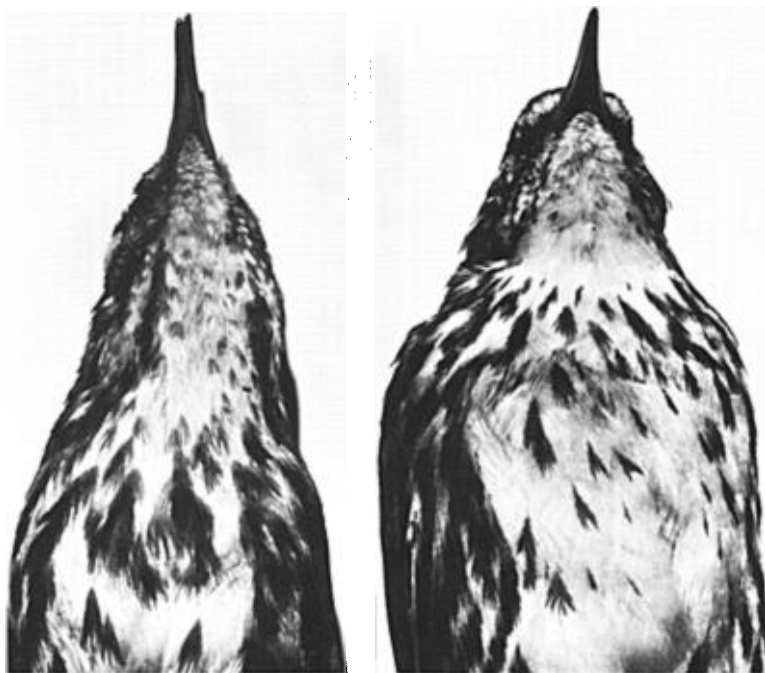


FIGURE 1. Contrary to statements in the literature, some Louisiana Waterthrushes (left) have heavier throat spotting than some Northern Waterthrushes (right).

individuals quite yellow and in others nearly white. In *motacilla*, however, the base color of these parts is a peculiar shade variously described in the literature as clear pale buff, ochraceous buff, cream buff, pale cinnamon, or pale fawn color, the differences in terminology in part reflecting individual variation in the birds. This buff color is usually rather bright, often very bright. I have seen no specimen or example in the field that entirely lacked this color. In a very small percentage of specimens, however, this color is so pale as to be relatively inconspicuous, and extreme care must be exercised in the field (especially in relation to lighting) to distinguish between the very pale buff of some *motacilla* and the yellow of *noveboracensis*. In

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the field the crissum of *motacilla* is much less useful than the flanks because the former is difficult to observe and always paler in color.

Since the ground color of the remainder of the under parts in *motacilla* is whitish (sometimes faintly tinted with buff on the belly and sides), the buff flanks form a rather conspicuous, well-defined *patch*. In those individuals of *novaboracensis* in which the ground color of the flanks is strongly yellow, the remainder of the under parts are also quite yellow, so that the two areas tend to blend together; in such cases the eyeline is also quite yellowish. Only in rare instances do the flanks of *novaboracensis* stand out as a patch, with the ground color of the rest of the under parts whitish. In these individuals, the flanks are yellow, not buff.

VOCALIZATIONS

The songs of the two species are, of course, quite distinctive, as adequately described in the literature. Unfortunately, the chances of hearing a singing waterthrush in California are remote. The literature also indicates that the call notes are slightly different, that of *motacilla* being somewhat louder, sharper, more emphatic, and more penetrating. In my opinion, however, these differences could be detected only by an expert who has made special studies of both species in the field. Also I suspect that a careful analysis of calls would reveal some overlap in the sound as detected by the human ear.

CONCLUSIONS

As can be seen from the preceding discussion, no single character is one hundred percent diagnostic. A bird that has strongly ochraceous-buff flanks or a combination of pure white eyeline (posterior part) and pale buff flanks is definitely a Louisiana. Any bird with a yellowish tint on the posterior part of the superciliaries or strong yellow on any portion of the underparts is definitely a Northern. This leaves us with the few birds that have white superciliaries, throat, breast, and belly combined with flanks that are so pale that the exact color cannot be determined in the field. For such individ-

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uals, a combination of all characters will probably enable identification by the more experienced birder and under the best conditions of observation. The beginning birder should not attempt identification of such a bird. In *motacilla* the bill averages larger, the throat is usually unspotted, the streaks below are usually broader and paler, and the over-all size is usually very slightly larger.

In practice, birds that are of doubtful identity usually prove to be Northern. The situation is one in which a birder might be tempted to make Northern into Louisiana, but when a Louisiana is finally seen, its identity is rather obvious.

IDENTIFICATION IN THE HAND

The same characters used in the field may also be used for identification in the hand. The colors of the flanks and posterior portion of the eyeline are again the most reliable criteria. Close inspection of the superciliaries, however, reveals in some individuals a faint edging or wash of olive on some feathers, which is not visible in the field. Throat spotting and the color of the ventral streaks become somewhat more useful in the hand.

SIZE

Sex for sex comparison of specimens shows overlap in all dimensions (the apparent gap in culmen length between females probably would be bridged by additional specimens). Since live waterthrushes cannot be sexed except by the presence of a brood patch or cloacal protuberance, attributes unlikely in nonbreeding individuals, measurements become even less useful, female Louisianas overlapping greatly with male Northern. Nevertheless, certain dimensions, notably the lengths of the wing and culmen, are helpful.

Following are the measurements (mm) that I have taken from specimens in the California Academy of Sciences and University of California Museum of Vertebrate Zoology at Berkeley. It should be

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noted that the sample sizes are small, especially for *motacilla*, and therefore might not represent the extremes for the species. The culmen was measured from the tip to the anterior extremity of the nostril, using sharply pointed dividers. The wing was measured along the chord. The sample sizes, extremes, and means are presented:

noveboracensis : wing (N=27), 72.1-79.1 (75.1); culmen (N=26), 9.0-10.5 (9.8).
noveboracensis : wing (15), 70.8-77.4 (73.9); culmen (14), 9.0-10.7 (10.0).
motacilla : wing (10) 78.0-82.8 (80.7); culmen (9), 10.2-12.2 (11.3).
motacilla : wing (5), 74.5-80.5 (77.5); culmen (6), 10.9-11.2 (11.0).

CRISSUM

There is one character that is diagnostic — the color pattern of the greater under tail coverts (see Fig. 2). The bases of these feathers correspond to the bases of the rectrices, and because of their position and shape form the outer feather row (on each side) of the crissum. They are numbered in the same manner as the rectrices, from the central pair outward. Thus the two central and longest greater under tail coverts are numbers "1." Because the sixth pair is small and difficult to examine, I am here concerned only with numbers 1 through 5.

I have examined 41 specimens of *noveboracensis* and 13 *motacilla* in which the crissum was intact. In all the Northern, greater under tail coverts numbers 1 through 5 showed a grayish-brown sagittate mark between the light tip and the filamentous dark gray base. The apex of this sagittate mark is on the shaft and is pointed distally.

In *motacilla*, coverts 4 and 5 were always immaculate. In three specimens all the coverts were unmarked. In nine others the first pair had some brown color irregularly placed as a blotch, mottling, or narrow shaft streak, but never a sagittate mark. In three of these nine, the second pair was also irregularly marked with brown. In one of the nine, numbers 1, 2, and 3 were marked. Thus the diagnostic feathers are numbers 4 and 5, which always have a grayish-brown sagittate mark along the shaft in *noveboracensis* and are immaculate in *motacilla*. The

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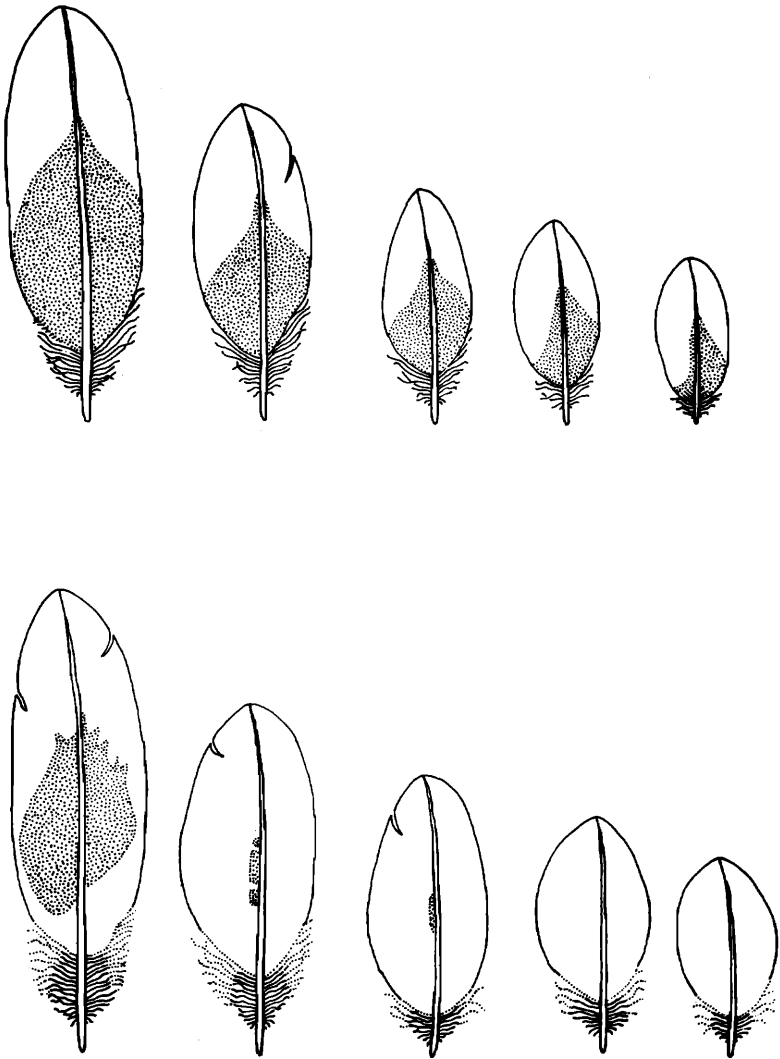


FIGURE 2. Northern and Louisiana waterthrushes can be separated in the hand by the color pattern of the first five greater under tail coverts (number 1 is the longest). In the Northern Waterthrush (top series) each of these feathers has a grayish-brown sagittate mark (stippled area) between the whitish tip and the filamentous dark gray base. In the Louisiana (bottom series) greater under tail coverts 4 and 5 are always immaculate, while 1-3 range from immaculate to irregularly marked with grayish-brown.

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shape of the markings on coverts 1-3 would also appear to be useful, if not diagnostic.

Ridgway (1902: 635) uses the color of the under tail coverts as a key character separating the two species. However, he describes the coverts of *motacilla* as "buffy whitish or pale buff, without grayish brown or olive base," making no mention of the irregular dark markings often present in this species.

ADDITIONAL CHARACTERS

The literature mentions three other characters supposedly separating the species, but none holds true. In his key to the genus, Sharpe (1885: 339) states that the axillaries of *motacilla* are "pale fulvous," while those of *noveboracensis* are "dark brown." In his description of *motacilla* (p. 343), however, he describes the axillaries as "pale brown." I can see no consistent differences between the species in the color of the axillaries.

Sharpe (1885: 342, 345) also indicates a difference in the color of the bases of the feathers of the concealed coronal patch: whitish in *motacilla* and yellowish-buff in *noveboracensis*. My inspection indicates that on the average these feathers in *motacilla* are less yellow, being either whitish or more heavily tinged with cinnamon. This difference, however, is so difficult to detect, so variable, and of such a slight magnitude as to be of little value.

Peterson (1947: 204) describes *motacilla* as a "grayer bird." Possibly he is referring to the under parts, which, however, would be described as paler, not grayer. The upper parts show no consistent differences, there being considerable individual variation.

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