VARBERGS ORNITOLOGISKA FÖRENING

Identification of reed warblers and marsh warblers

Quantification of the relation between the longest tertial and the inner secondary

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Introduction

We have been paid attention to a character mentioned in the book Advanced Bird Id Guide by Nils van Duivendijk which concerns the longest tertial and secondaries. It says that in marsh warblers the tertials extend beyond the innermost secondary (IMS) while in reed warblers the longest tertial is at the same level as the IMS. We could not find any reference to this character so we decided to investigate to what extent this is true by measuring the distance between the IMS and the longest tertial. We assessed the length in half a millimeter. Positive lengths indicate that the tertial is longer than the IMS, while negative lengths indicate that it is shorter, and zero indicates that the tertial is at the same level as the IMS. The measurements were made by measuring the distance in a folded wing with a ruler. In the case of the short distances when the tertial measured the same length as the secondary and the measurements were a difference of one or half a millimeter, the measurements were assessed by eye measurement.

Measurements

The measurements have been made by the authors in Bingsmarken and Getterön between 28 of July and 9 of September 2024. A total of 1346 birds have been measured, of which 625 juvenile reed warblers, 446 juvenile marsh warblers, 154 adult reed warblers and 121 adult marsh warblers. These have been measured on the left wing and for these also have wing length and where the notch on second primary falls on the primaries or secondaries. For some of these, the right wing has also been measured regarding the relationship between the outermost tertial and the IMS. This has been done for 486 juvenile reed warblers and 196 juvenile marsh warblers. For adult birds we have too few of dual measurements to be worth showing but the results fall within those of the juveniles. We have compared whether the results co-vary with wing length or where the notch on the second primary falls on the primaries or secondaries, but according to our data it is completely uncorrelated with the length of the tertials.

Method

The measurement was done with the wing feathers at rest and the tertial placed above the IMS. No stretching has taken place and the wings have been folded.

Reed warbler

For the majority of reed warblers, the longest tertial falls equal to or below the tip of the IMS. Only about 6% of the juvenile birds and about 11% of the adult ones had the tertial longer than IMS and for most of these it was marginally longer. One young bird and four old ones had the tertial one millimeter longer than the secondary. Of those measured on both wings, there are even fewer, just over 4%, where the tertial falls outside the IMS on both wings.

Marsh warbler

FFor the majority of marsh warblers, the longest tertial falls outside the tip of the IMS. Only just under 4% of the juvenile birds and just over 4% of the adult ones fell equal to or shorter than the IMS. No adult bird fell short and only two juvenile birds. The proportion that fell marginally outside the innermost feather (0.5 mm) where there are also some reed warblers was slightly higher, 13% for the juvenile birds and just over 6% of the adult ones. It may be added that only 1.5% were equal or shorter on both wings.

Table 1. Length of longest tertial in relation to innermost secondary on the left wing. Negative numbers show that the tertial is below the innermost secondary with the wing folded, while positive numbers show that the tertial falls as far outside the innermost secondary. The table shows the number of birds measured.

Juveniles

mm	reed warbler	marsh warbler
4		
3.5		
3		7
2.5		14
2		60
1.5		145
1	1	145
0.5	38	58
0	363	15
-0.5	160	2
-1	59	
-1.5	4	

Adults

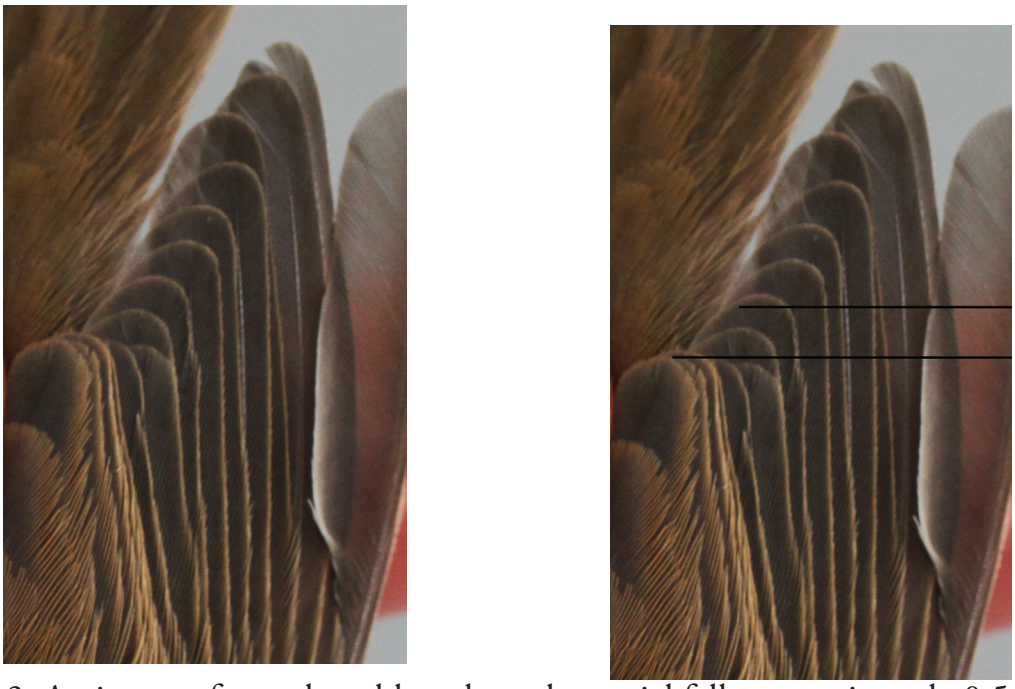
mm	reed warbler	marsh warbler
4		1
3.5		3
3		7
2.5		23
2		16
1.5		27
1	4	31
0.5	13	8
0	101	5
-0.5	23	
-1	9	
-1.5	4	

Table 2. The relationship between the longest tertial and the innermost secondary on the left wing and the right wing. The y-axis shows the left wing and the x-axis the right wing. Numbers without squares show reed warblers and with marsh warblers. Only juvenile birds.

3									1	
2.5								4	2	
2							8	20	3	3
1.5				1		6	21	6		
1				1 1	5	35	10			
0.5			3	13 6	20 30	1 15	3			
0			31	191 1	15 10	3				
-0.5		11	112 1	25 1						
-1	2	47	9	1						
-1.5	3	1								
	-1.5	-1	-0.5	0	0.5	1	1.5	2	2.5	3

Figure 1. An image of a marsh warbler where the tertial falls approximately 1 mm outside the innermost secondary and the notch falls just below the top of primary 7.

Figure 2. An image of a reed warbler where the tertial falls approximately even with the innermost secondary and the notch falls between primary 9 and 10.



Figur 3. An image of a reed warbler where the tertial falls approximately 0.5 mm below the innermost secondary.

Discussion

We have seen in this season that this character is a good supporting character but cannot be used as only character. It is easily observed when you still measure where the notch falls. The character cannot of course be used unless tertials or secondaries are missing or growing. There are also a number of both reed warblers and marsh warblers that have marginally longer tertials compared to the innermost secondary.

Many reed warblers and marsh warblers are fairly easy to distinguish, but there are a number of individuals that are very difficult and we recommend using multiple characters when ringing these species. The tertial length is, with some experience, an easy and very quick character to check when measuring wings or checking the notch anyway.

Below is a compilation of other characters with references.

1. The relationship between wing length and the length of the notch. Reed warbler has a relatively short wing and deep notch, while marsh warbler has a long wing and short notch, see Falsterbo's identification paper. There is a small overlap zone for juvenile birds but not for adults.
2. Where the notch falls on other wing feathers, see Falsterbo and Svensson 2023. Reed warblers normally fall from the 9th primary down to the secondaries, while marsh warblers usually fall between the 7th and 8th primary.
3. Claw and foot color. Reed warblers have dark claws and a clear contrast between the upper side of the feet and the underside, while marsh warblers have lighter claws and weak contrast between the upper and lower sides of the foot, see Bingsmarken's website.
4. Shape of the bill. Reed warblers have longer and narrower bills, while marsh warblers' bills are shorter and slightly wider, see Bingsmarken's website and Svensson 2023.
5. Coloring. Reed Warbler has reddish upperparts and rump while Marsh Warbler is more olive colored. Note, however, that some young marsh warblers are quite reddish, see Bingsmarken's website and Svensson 2023.
6. Coloration and contrasts on tertials and wing feathers. Reed warblers are darker on tertials and with a diffuse border to reddish-brown edges, and usually have no or faint light tips on the wing feathers. Marsh warblers have a sharp border to the outer part of the tertials, which are also more yellowish-red and brighter than the reed warbler, and they usually have clear light spots on the tips of the wing feathers, see Bingsmarken's website and Svensson 2023.
7. Tongue spots on juveniles. The marsh warbler's tongue spots fade faster than those of the reed warbler and are usually weak or completely gone already in early or mid-August, while the reed warbler's are evident well into September, see Svensson 2023.

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