NÁRODNÍ MUZEUM

Journal of the National Museum (Prague), Natural History Series
Vol. 194 (2025), ISSN 1802-6842 (print), 1802-6850 (electronic)

Původní práce / Original paper

DOI: 10.37520/jnmpnhs.2025.004

A new subspecies of Savi's Warbler *Lacustella luscinioides* (Savi, 1824) from the Iberian Peninsula (Aves: Sylviidae)

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Mlíkovský J., 2025: A new subspecies of Savi's Warbler *Lacustella luscinioides* (Savi, 1824) from the Iberian Peninsula (Aves: Sylviidae). – Journal of the National Museum (Prague), Natural History Series 194: 55–61.

ZooBank: urn:lsid:zoobank.org:pub:0330634E-FFC4-45BD-8072-A94188161B13

Abstract: Morphological and molecular data show that Iberian Savi's Warblers are different from their conspecifics inhabiting the rest of the species' range. The Iberian form is described here as a new subspecies, *Locustella luscinioides iberica* Mlíkovský, ssp. n.

Keywords: Sylviidae, *Locustella* warblers, systematics, western Palearctic

Received: 28 July 2025 | Accepted: 1 October 2025 | Published on-line: 14 October 2025

Introduction

Savi's Warbler *Locustella luscinioides* (Savi, 1824) is a widespread songbird of the southern Palearctic (Pearson 2006, Kennerley & Pearson 2010, Hoyo & Collar 2016). Traditionally, it is divided in two subspecies: *L. l. luscinioides* (Savi, 1824) from the Western Palaearctic, and *L.c. fusca* (Sěvercov, 1873) from the Middle Asia, to which some authors add an intermediary subspecies *L. l. sarmatica* Kazakov, 1973 (Anonymous 2014, Hoyo & Collar 2016). These subspecies were based mainly on the overall darkness/paleness of plumage and are weakly supported (Vaurie 1959, Mlíkovský, unpublished results).

A molecular study (Neto et al. 2012) showed a contradictory pattern: The *cyt b* gene clustered the birds into two distinct groups, one inhabiting the Iberian Peninsula, and the other inhabiting the rest of the species' breeding range. My study of the external morphology of this species supported this finding (see below).

Material and methods

I studied and measured all specimens available in the Natural History Museum at Tring (NHMUK), except those with growing or damaged primaries (wing length and Kipp's distance), damaged bills (bill length), and those of doubtful origin (all characters).

Measurements followed the following standards: 'Wflat' for wing length, 'BNdist' for bill length, and 'Kipp' for Kipp's distance (Eck et al. 2011).

Note that all measurements were taken from museum specimens. Thus, they are shorter than measurements taken from living individuals (Mlíkovský 2023: 140 and references cited therein).

Systematic ornithology

Overall, seven scientific names were given to Savi's Warbler in 1824–1973. They include (in chronological order): *Sylvia luscinioides* (Savi 1824: 341; Italy), *Pseudoluscinia savii* Bonaparte (1838: 12; new replacement name for *luscinioides*), *Locustella wodzickii* Brehm (1855: 234; Ukraine), *Threnetria acheta* Schauer (1873: 183; new replacement name for *luscinioides*), *Cettia fusca* Sěvercov (1873: 131; Kazakhstan), *Locustella luscinioïdes geyri* Koenig (1908: 123; Germany), and *Locustella luscinioides sarmatica* Kazakov (1973: 616; European Russia).

None of these names applies to the Iberian breeding population. Thus, I describe here the Iberian form as new for science.

Locustella luscinioides iberica Mlíkovský, ssp. n.

urn:lsid:zoobank.org:act:BFA051D2-C273-4E47-8E8F-AE194DB1EDD1

Holotype (Figs. 1–3): NHMUK 1898.9.1.1317 (ex Seebohm Coll.), ad. ♀, shot by Leonard Howard Irby (1836-1905) off nest (with 4 eggs)[1] on 9 May 1874 at "Casa Vuja, Andalucia" (label data).

Diagnosis: Plumage coloration as in other European birds, but wings much shorter (Tab. 1, Fig. 4), Kipp's distance much shorter (Tab. 1, Fig. 5) and bill slightly shorter (Tab. 1, Fig. 6). In addition, Spanish breeders were found to start molting their primaries with the 5th (outermost) primary, while Polish breeders started molting their primaries with the 3rd (outermost) primary (Kulaszewicz & Jakubas 2015).[2] This indicates that Iberian Savi's Wablers follow a different molting strategy than other European breeders, but a study of more breeding populations is required to confirm this. In addition, Iberian Savi's Warblers differ from other European and Asian birds in the structure of *cyt b* gene (Neto et al. 2012).

Measurements (holotype): wing length = 62 mm, bill from nostrils = 8.2 mm, Kipp's distance = 19 mm. For biometrical comparison of the Iberian with non-Iberian breeders see Tab. 1. Note that the differences in size between juvenile and adult birds and between adult males and adult females are very small (Müller 1981, Nowakowski 2002, Bräger & Tschirnhaus 2013, Kulaszewicz et al. 2013).

Type locality: Casas Viejas, Cádiz Province, Andalusia, Spain; 36.33°N, 05.80°W.

Breeding distribution: Locally breeds in the Iberian Peninsula (Juana & Garcia 2015, Werner 2020). The birds breeding locally in Maghreb (Isenmann & Moali 2000, Thévenot et al. 2003) also may belong to the subspecies *iberica*, pending further study.[3]

Winter grounds: Scanty records indicate that Iberian breeders migrate to western Sahel for winter (Spina et al. 2022).

Etymology: Latin *iberica* refers to the stronghold of *Locustella luscinioides iberica*, the Iberian Peninsula.

1 It is unknown whether Irby collected these eggs. The NHMUK possesses two sets of eggs, each with two eggs, collected by Irby on unspecified date(s) in southern Spain (NHMUK E/2000.16.634, and NHMUK unregistered, respectively), but it remains unclear whether they originated from the above-mentioned nest or from other nests (D.G.D. Russell, in litt. on 9 July 2025). Irby found several nests with eggs in May 1874, all at the same locality (Irby 1875: 95, 1895: 59-61).

2 For the complex molting patterns in *Locustella luscinuioides* see also Stresemann & Stresemann (1970), Steiner (1970), Thomas (1977), Müller (1981), Neto & Gosler (2006), and Neto et al. (2006).

3 A single specimen from Aïn-Zana (*c.*36.40°N, 08.19°E), Algeria (NHMUK 1879.4.5.243) was collected on an unknown date in 1857. Its dimensions (wing length = 66 mm, Kipp's distance = 19 mm, bill length = 7.9 mm) are intermediate between nominotypic *luscinioides* and *iberica*, and the specimen may belong to any of the two subspecies (I included this specimen in the non-Iberian group, i.e. in the nominotypic *luscinioides*, in Tab. 1). In absence of the exact date of collection it is impossible to say whether this specimen was a locally breeding bird or a bird on migration.

Fig. 1. Holotype of *Locustella luscinioides iberica* Mlíkovský, ssp. n. Dorsal view.
Photo: Jiří Mlíkovský (@ Trustees of the Natural History Museum, London).

Fig. 2. Holotype of *Locustella luscinioides iberica* Mlíkovský, ssp. n. Lateral view.
Photo: Jiří Mlíkovský (@ Trustees of the Natural History Museum, London).

Fig. 3. Holotype of *Locustella luscinioides iberica* Mlíkovský, ssp. n. Distal view.
Photo: Jiří Mlíkovský (@ Trustees of the Natural History Museum, London).

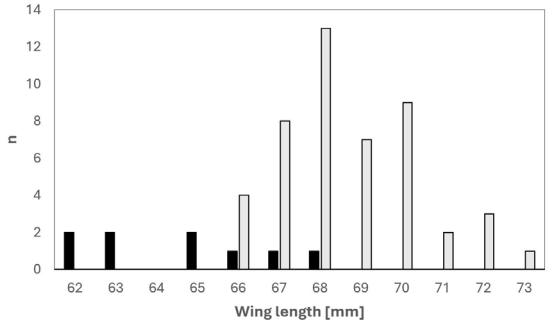

Fig. 4. Wing length in Iberian (black columns) and non-Iberian (gray columns) *Locustella luscinioides*. Full-grown birds, sexes combined, n = 55. For statistical evaluation see Tab. 1. The difference between Iberian and non-Iberian specimens is highly significant (p < 0.0001).

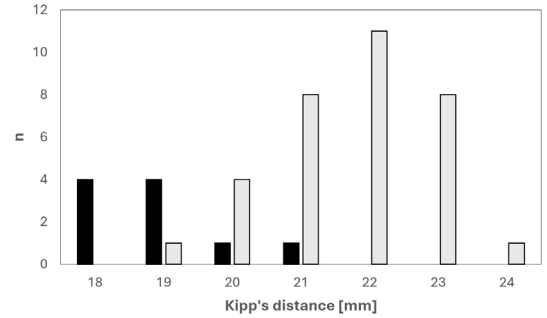

Fig. 5. Kipp's distance in Iberian (black columns) and non-Iberian (gray columns) *Locustella luscinioides*. Full-grown birds, sexes combined, n = 43. For statistical evaluation see Tab. 1. The difference between Iberian and non-Iberian specimens is highly significant (p < 0.0001).

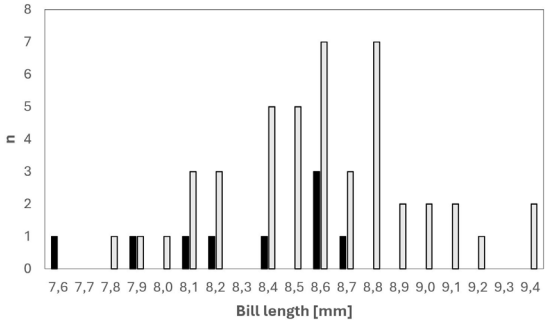

Fig. 6. Bill length (from nostrils) in Iberian (black columns) and non-Iberian (gray columns) *Locustella luscinioides*. Full-grown birds, sexes combined, n = 43. For statistical evaluation see Tab. 1. The difference between Iberian and non-Iberian specimens is slightly significant (p = 0.0358).

	Taxon	m	SD	CV	Range	n	p
Males							
Wing	Iberia	65.4	2.3	3.52	62–67	5	<0.0001
	Other	69.3	1.64	2.37	67–73	22	
Kipp	Iberia	19.5	1.29	6.62	18–21	4	0.0005
	Other	21.7	0.80	3.68	20–23	15	
Bill	Iberia	8.5	0.27	3.19	8.1–8.7	4	0.644
	Other	8.61	0.44	5.16	8.0–9.4	17	
Females							
Wing	Iberia	62				1	–
	Other	68.3	1.22	1.79	67–70	9	
Kipp	Iberia	19				1	–
	Other	21.4	2.37	11.07	18–24	7	
Bill	Iberia	8.2				1	–
	Other	8.4	0.30	3.61	7.8–8.8	9	
All							
Wing	Iberia	64.7	2.11	3.26	62–68	10	<0.0001
	Other	68.7	1.74	2.53	66–73	45	
Kipp	Iberia	18.9	0.99	5.26	18–21	10	<0.0001
	Other	21.7	1.15	5.31	19–24	33	
Bill	Iberia	8.3	0.38	4.54	7.9–8.7	9	0.0358
	Other	8.6	0.38	4.44	7.8–9.4	34	

Tab. 1. Measurements of full-grown *Locustella luscinioides*. m = mean [mm], SD = standard deviation [mm], CV = coefficient of variability [%], n = number of specimens, p = two-tailed t-test, wing = wing length [mm], bill = bill length [mm], Kipp = Kipp's distance [mm].

Discussion

The Iberian Peninsula is known as a center of endemism (Martín et al. 2000, García-Barros et al. 2002), including that of birds (Keller et al. 2020). The present description of a new subspecies of *Locustella luscinioides* contributes to the uniqueness of the Iberian Peninsula in the Palearctic.

Acknowledgments

For permission to study birds in the Natural History Museum at Tring, United Kingdom, and hospitality during my visit, I thank (in alphabetic order): Mark P. Adams, Alexander L. Bond, and Hein van Grouw. Dougles G.D. Russell (NHMUK) kindly supplied information on Irby's eggs from Spain. For comments on the manuscript I thank to Hein van Grouw (Tring) and Jan Hušek (Praha).

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