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Song dialects as diagnostic characters — acoustic differentiation of the Canary Island Goldcrest subspecies *Regulus regulus teneriffae* Seebohm 1883 and *R. r. ellenthalerae* Päckert *et al.* 2006 (Aves: Passeriformes: Regulidae)

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Abstract

Acoustic differentiation among Goldcrests (*Regulus regulus*) from the Canary Islands was investigated by sonagraphic analysis with respect to the recently discovered genetic subdivision of the Canarian populations into a clade from Tenerife and La Gomera (nominate ssp. *teneriffae*) and a second clade from La Palma and El Hierro (recently described as ssp. *ellenthalerae*). One common dialect, song type A, was found on all four islands inhabited by Goldcrests and is also present on São Miguel, Azores (ssp. *azoricus*). This one is composed of a rapid trill introduction followed by an ascending part and a terminal flourish. Further Canarian song types are variations of this dialect, differing in trill elements and composition of the second ascending phrase. A remarkably different dialect was exclusively found in the Anaga Mountains on Tenerife. The rhythmic song pattern of alternating high- and lower-pitched elements shows strong resemblance to the song of European nominate *regulus* and to other island dialects from the Azores. Local variations of song type A were found on El Hierro and La Palma. Three acoustic clusters can be distinguished by discriminant analysis, one comprising all songs of ssp. *ellenthalerae* from La Palma and El Hierro and two further *teneriffae* clusters encompassing songs from La Gomera on the one hand and those from Tenerife on the other. The findings are discussed with respect to the potential evolutionary causes of the different song repertoires on the Canaries, the Azores and the European continent and to the use of acoustic markers for taxonomic diagnosis.

Keywords: Macaronesia, discriminant analysis, territorial song, subsong, repertoires

Introduction

The comparative analysis of vocal characters is nowadays regarded as a highly appropriate method in avian taxonomy and systematics especially for passerine bird species (review in

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