

Photospot:**'Splitting hairs'?: the Blue Tits of the Canary Islands**

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'Couper les cheveux en quatre? : les Mésanges bleues des Îles Canaries. La Mésange bleue *Parus* (*Cyanistes*) *caeruleus* est largement distribuée dans le Paléarctique occidental. Des données génétiques récentes appuyent fortement la proposition qu'il s'agit en fait de plus d'une espèce, les 15 taxons pouvant en tout cas être subdivisés en deux groupes assez distincts, *teneriffae* et *caeruleus*. Le premier se trouve dans les Îles Canaries et, probablement, en Afrique du Nord, tandis que *caeruleus* occupe le reste de l'aire de distribution continentale. Ce 'photospot' analyse et illustre les variations à l'intérieur du groupe *teneriffae*, qui comprend cinq sous-espèces dans les Îles Canaries et une ou deux en Afrique du Nord. Des preuves fournies par l'étude des vocalisations, des différences de plumage plus limitées (mais néanmoins apparemment constantes), ainsi qu'une différenciation génétique, incitent certaines autorités à traiter les taxons suivants comme espèces: *teneriffae* (sur les îles de La Gomera et Tenerife), *palmensis* (La Palma), *ombriosus* (El Hierro), *hedwigii* (Gran Canaria) et *ultramarinus* (en Afrique du Nord et dans les Îles Canaries orientales de Lanzarote et Fuerteventura). Des études supplémentaires devraient tenter d'élucider si le taxon *degener*, décrit de Lanzarote et Fuerteventura, est valable ou devrait être considéré comme un synonyme de *ultramarinus*, et si tous ces différents taxons méritent réellement d'être traités comme des espèces à part entière sous l'application moderne du Concept Biologique des Espèces.

The 'humble' Blue Tit *Parus caeruleus*, a familiar bird to European readers, has proved, but recently, to be rather more enigmatic in its taxonomy than was long presumed to be the case. Indeed, one might casually, but correctly, state its taxonomy to be in positive turmoil, given that its proposed return to the genus *Cyanistes* Kaup, 1829 (following the results of the molecular study of Gill *et al.* 2005), is already accruing wide support (Collinson 2007, Gosler & Clement 2007), whilst debate over whether to recognise one, two, or as many as five species has been ongoing for more than a decade. Some 15 taxa are nowadays recognised for this complex (Dickinson 2003, Gosler & Clement 2007), which subdivide rather neatly into two groups, as noted, for instance, by Vaurie (1957), although some debate persists concerning the most appropriate 'home' for the North African races *ultramarinus* (Morocco to northern Tunisia) and *cyrenaicae* (of north-east Libya); see below. Variation amidst the rather larger group of continental races, the nominate *caeruleus*-group, is generally rather slight and frequently clinal (see, for example, Harrap & Quinn 1996), but the *teneriffae*-group, as already noted by Vaurie (*op. cit.*), who preferred to clump the African forms within it, represents a quite different and, in the majority of cases, readily diagnosable assortment of taxa.

This Photospot focuses on the four, or (as only very recently proposed) five, taxa occurring in the Canary Islands, off north-west Africa, which are as follows: *Parus caeruleus teneriffae* Lesson, 1831, from La Gomera and Tenerife, *P. c. palmensis* Meade-Waldo, 1899, of La Palma, *P. c. ombriosus* Meade-Waldo, 1890, confined to El Hierro, *P. c. degener* E. J. O. Hartert, 1901, of Lanzarote and Fuerteventura (though see below), and *P. c. hedwigii* Dietzen, Garcia-del-Rey, Delgado Castro & Wink, 2007, on Gran Canaria (from where birds had previously been assigned to *teneriffae*). From Eurasian races, they (and the North African birds) collectively differ in their blackish crown, blue-grey to slate-grey upperparts (with the exception of *ombriosus*, and to a lesser extent *palmensis*, which show some green on the upper mantle), longer bill, and territorial songs, which are characterised by rapid changes in frequency.

The vocal work undertaken by Becker *et al.* (1980), Schottler (1993, 1995) and Schottler & Martens (1991, 1992) on these Canarian Blue Tits, as well as the morphological differences reiterated by Grant (1979), and the proposal by Martin (1991) to 'split' the *teneriffae*-group from the *caeruleus*-group, prompted a review paper by Sangster (1996). Sangster made the bold recommendation to recognise not two, but five species

within the complex, namely European Blue Tit *P. caeruleus*, North African Blue Tit *P. ultramarinus* (including *cyrenaicae*), Tenerife Blue Tit *P. teneriffae*, Fuerteventura Blue Tit *P. degener*, Hierro Blue Tit *P. ombriosus* and Palma Blue Tit *P. palmensis*.

Outside the Netherlands, this proposal attracted little, if any, published support but undoubtedly pricked the interest of travelling birders. Although Harrap & Quinn (1996) had also noted the possibility that more than one species might be involved, the relevant volume (6) of *Birds of Africa* (Fry & Keith 2000) continued to treat the two mainland taxa as part of a single widespread species (Macaronesia, although deemed part of the ABC region, was not included within that of *BoA*), just one of many taxonomic decisions the editors might be tended to reverse with the benefit of hindsight (Fry *et al.* 2004). Indeed, since the publications of Salzburger *et al.* (2002) and Kvist *et al.* (2004), both of whom uncovered significant levels of genetic divergence between the *caeruleus*- and *teneriffae*-groups, there has been growing support for the recognition of two (European and African) species, although Gosler & Clement (2007), who also favoured the dual species approach, will have surprised many by including the two North African taxa within *P. caeruleus*, rather than *P. teneriffae* (Canary Blue Tit therein).

Even more recently, another genetic (and morphometric) study, by Dietzen *et al.* (2007), has led to the description of a new taxon from the Canaries, the above-mentioned *hedwigii*, from Gran Canaria. (Earlier, Kvist *et al.* 2005 had also uncovered genetic evidence that the population on Gran Canaria appeared distinct from *teneriffae*.) Dietzen *et al.* (*op. cit.*) elected to treat the *teneriffae*-group, including *ultramarinus*, as a single species, but took the, at first sight, radical step of synonymizing *degener* with *ultramarinus*, based on their near-identical mtDNA (just 0.2–0.3% difference).

Given that *degener* occurs on the two easternmost islands of the Canaries group, this is a less surprising proposition than it might initially appear. (As yet, the origin and colonisation history of the Canaries by *Parus caeruleus* is unclear, but the available evidence provides support for a multi-event colonisation theory: Kvist *et al.* 2005, Dietzen *et al.* 2007.) More than 50 years ago, Vaurie (1957) had already pointed out that '*degener* . . . approaches the coloration of *ultramarinus*', but had persisted in maintaining the former name because 'the two

can nevertheless be differentiated without difficulty, *degener* being paler above and below and showing more white on the center of the abdomen.'

Because the Dietzen *et al.* (*op. cit.*) study uncovered differences of 2.1% to 4.8% in mtDNA between the different named populations, which might be considered rather high between subspecies, the Dutch Birding Association (DBA) currently recognises *teneriffae*, *palmensis*, *ombriosus*, *hedwigii* and *ultramarinus* all as species (van den Berg 2008). Nonetheless, with regard to both the DBA decision and the proposal by Dietzen *et al.* (*op. cit.*) to regard *degener* as a synonym of *ultramarinus*, it merits reiteration that very little, if any, consensus exists concerning the levels of genetic differentiation required to support or deny different taxonomic status, much less to meaningfully interpret such differences within insular or continental contexts, which it might to some extent be admitted present different playing fields. Furthermore, it is known that, at least in some cases, levels of variation between avian taxa

Captions to photos on opposite page

Figure 1. Tenerife Blue Tit / Mésange bleue de Tenerife *Parus caeruleus teneriffae*, Las Lajas, Tenerife, July 2006 (Andrew Grieve)

Figure 2. Tenerife Blue Tit / Mésange bleue de Tenerife *Parus caeruleus teneriffae*, Las Lajas, Tenerife, December 2006 (Cyril Schönbachler)

Figure 3. Palma Blue Tit / Mésange bleue de La Palma *Parus caeruleus palmensis*, May 2005, La Palma, Los Tilos (Domingo Trujillo González)

Figure 4. Hierro Blue Tit / Mésange bleue de Hierro *Parus caeruleus ombriosus*, east of Frontera, El Hierro, July 2006 (Andrew Grieve)

Figure 5. Gran Canaria Blue Tit / Mésange bleue de Gran Canaria *Parus caeruleus hedwigii*, Ayacata, Gran Canaria, January 2007 (Cyril Schönbachler)

Figure 6. Juvenile Gran Canaria Blue Tit / Mésange bleue de Gran Canaria *Parus caeruleus hedwigii*, Inagua, Gran Canaria, June 2007 (Domingo Trujillo González)

Figure 7. Fuerteventura Blue Tit / Mésange bleue de Fuerteventura *Parus caeruleus degener*, Lanzarote, May (© *Taxonomy of Birds of the World: A Photographic Handbook*, in prep., by Jornvall & Shirihai, publisher A. & C. Black)

Figure 8. African Blue Tit / Mésange bleue africaine *Parus caeruleus ultramarinus*, Zida, Morocco, January 2006 (Augusto Faustino)

Figure 9. African Blue Tit / Mésange bleue africaine *Parus caeruleus ultramarinus*, Dayet Aoua, Ifrane, Morocco, January 2006 (Augusto Faustino)



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may differ quite strikingly depending on whether nuclear or mitochondrial DNA is sampled (Brawn *et al.* 1996), and some authors (e.g. Zink & Barrowclough 2008) have voiced the proposition that inferences concerning species limits based upon mtDNA are potentially unreliable unless corroborated by nuclear gene data.

Given that all five forms occurring in the Canaries are endemic to single, or in two cases two, islands, their in-the-field separation should, in theory, require little more than the ability to remember on which island you are standing. (Instances of vagrancy are apparently unknown, for now.) Leaving aside the issue of whether *degener* really is a synonym of *ultramarinus*, succinct and accurate summaries of the morphological (and vocal) differences separating the different taxa, other than the more recently described *hedwigii*, can be found in Gosler & Clement (2007) and Clarke (2006), the latter guide likely to be that of choice amongst birders visiting the islands, as well as, of course, Harrap & Quinn (1996) and Snow & Perrins (1998). Nominate *teneriffae* (Figs. 1–2) is rather obviously different to the other taxa by virtue of its lacking a wingbar and any obvious paler fringes to the tertials, whereas birds on El Hierro (*ombriosus*) possess only a very indistinct greyish-white wingbar (on the greater coverts), but also show traces of greenish on the mantle (Fig. 4), and are slightly larger. Those (Fig. 3) on La Palma (*palmensis*) may also show (much less) of a greenish tone to the upperparts but, unlike *ombriosus*, the whiter wingbar, secondary and tertial fringes, are usually rather obvious, at least in fresh plumage, whilst the underparts are considerably paler, due in particular to the belly being more extensively white. Compared to *teneriffae*, La Palma birds are overall duller, with a less glossy cap, a broader supercilium and more prominent eyestripe. Dietzen *et al.* (2007) suggest that *hedwigii* (Figs. 5–6) differs only marginally from the preceding taxa (especially *teneriffae*), but that its slightly paler, greyish-tinged upperparts, broader black throat patch, and narrower white nape line might prove to be consistent differences; they also provide data on voice and mensural characters. Finally, *degener* (or *ultramarinus*) is, compared to all of the other taxa on the Canaries, predominantly pale yellow below, with only a small whitish belly-patch but long blackish ventral line, obviously paler and greyer upperparts, a narrow white supercilium and narrower dark nuchal band, as well as a relative-

ly striking white wingbar and tertial fringes (Fig. 7; see Figs. 8–9 for comparison with North African birds).

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