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Biogeographical regionalisation of the Andean region

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Abstract

A biogeographic regionalisation of the Andean region is proposed as a hierarchical classification of sub-regions, provinces, sub-provinces and districts. It is based on biogeographic analyses of terrestrial plant and animal taxa, and seeks to provide universality, objectivity and stability. The Andean region is currently comprised of the Central Chilean, Subantarctic and Patagonian sub-regions and the South American transition zone, 15 provinces, five sub-provinces and 81 districts. Complete synonymies and brief descriptions of the areas are provided, as well as the endemic taxa that diagnose the provinces.

Key words: Andean, biogeographical classification, Central Chile, Patagonia, South America, Subantarctic

Introduction

The Andean region was recognized originally as a sub-region of the Neotropical region of the Sclater-Wallace system. Several phytogeographers and zoogeographers working with invertebrates, however, adopted a more restrictive definition of the Neotropical region, excluding the Andean area because of its closest links with other Austral areas, mainly Australia, Tasmania, New Guinea, New Zealand and South Africa (Blyth 1871; Engler 1882; Diels 1908; Good 1947; Monrós 1958; Kuschel 1964; Cabrera & Willink 1973; Amorim & Tozoni 1994; Morrone 2002, 2006, 2014a; Moreira-Muñoz 2007). The Andean region, also known as Andean-Patagonian, Patagonian, Argentinean, Chilean or Austral, is assigned to the Austral kingdom (Fig. 1).

Several authors have recognized dominions, provinces and districts within the Andean region (Cabrera & Willink 1973; Müller 1973; Udvardy 1975; Rivas-Martínez & Navarro 1994; Dinerstein *et al.* 1995). In addition to these general schemes there are regionalisations referred in particular to Argentina (Cabrera 1951, 1953, 1957, 1971; Ringuet 1961) and Chile (Peña 1966; O’Brien 1971; Artigas 1975). Previously, I have synthesized some of these previous schemes and, mostly based on track analyses of plant and animal taxa, regionalised Latin America and the Caribbean (Morrone 2001e).

My objective is to provide a regionalisation of the Andean region, with explicit area definitions and a standardised nomenclature, so that different area definitions for the same name or the same areas with different names can be avoided, as have been recently done for the Australian (Ebach *et al.* 2013) and Neotropical (Morrone 2014a) regions. This regionalisation of the Andean region is based on terrestrial taxa, and includes previously defined areas and their names.

General structure

A biogeographical regionalisation is a hierarchical system that categorize geographic areas in terms of their biotas, involving the basic levels of realm, region, dominion, province and district (Ebach *et al.* 2008; Escalante 2009). The regionalisation of the Andean region presented herein comprises five hierarchical levels: sub-regions, dominions, provinces, sub-provinces and districts. In general I followed the nomenclatural conventions set out in ICAN (Ebach *et al.* 2008), following the notion of priority for using existing names instead of new names. Sclater

Northern Payunia district Domínguez *et al.* 2006, stat. nov.

Northern Payunia area Domínguez *et al.* 2006: 1534.

Southern Payunia district Domínguez *et al.* 2006, stat. nov.

Southern Payunia area Domínguez *et al.* 2006: 1534.

Subandean sub-province Soriano 1950, stat. nov.

Subandean district Soriano 1950: 33, 1956: 324; Cabrera 1951: 55, 1971: 35; Cabrera & Willink 1973: 95; Cabrera 1976: 69; ; León *et al.* 1998: 132.

Aysén cordillera region Peña 1966: 15.

Austral Altoandean district Cabrera 1971: 32, 1976: 57; Roig 1998: 139.

Steppe zone (in part) Cekalovic 1974: 308.

Subandean Patagonian province Morrone 1999: 15, 2001c: 4.

Subandean Patagonia province Morrone 2001b: 132, 2004a: 158, 2006: 486, 2010: 38; Morrone *et al.* 2002: 4; Ferretti *et al.* 2014: 2.

Meridional Subandean Patagonia district Domínguez *et al.* 2006, stat. nov.

Meridional Subandean Patagonia area Domínguez *et al.* 2006: 1534.

Septentrional Subandean Patagonia district Domínguez *et al.* 2006, stat. nov.

Septentrional Subandean Patagonia area Domínguez *et al.* 2006: 1534.

Western Patagonian sub-province Cabrera 1951

Western district Soriano 1950: 33, 1956: 324; Cabrera 1976: 66; Soriano 1983: 441; León *et al.* 1998: 128.

Western Patagonian district Cabrera 1951: 56, 1971: 34; Cabrera & Willink 1973: 94.

Western Patagonia area Roig-Juñent 1994b: 183; Flores & Roig-Juñent 2001: 315; Roig-Juñent & Flores 2001: 258; Domínguez *et al.* 2006: 1534; Roig-Juñent *et al.* 2006: 408; Díaz Gómez *et al.* 2009: 4.

Western Patagonian province Morrone 1999: 15.

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