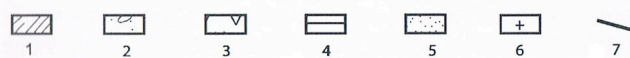
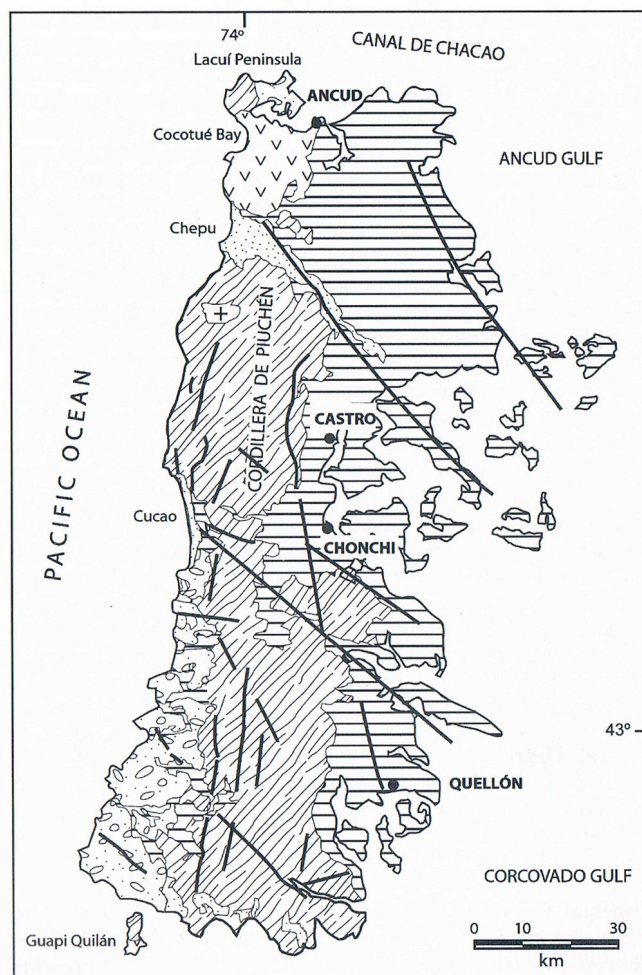


Andean tectonostratigraphy in the third stage: late Palaeogene-recent

This stage corresponds to the last phase of Andean development, during which the Argentine-Chilean Andes adopted their present configuration. During this stage, among other important events, Andean uplift took place, the morpho-structural units were developed, the volcanic arc reached its present position, and the post-Incaic porphyry copper deposits were emplaced.

Geological map of Chiloé island (41-43°30'S) showing the main stratigraphic units, based on Muñoz *et al.* (1999) and Antinao *et al.* (2000). The island that forms the southward prolongation of the Coastal Cordillera south of Canal de Chacao consists of a north-south orientated core of metamorphic rocks with Cenozoic deposits on both sides. Key: 1, Palaeozoic-Triassic metamorphic basements; 2, latest Palaeogene-Neogene sedimentary deposits; 3, volcanic complexes (Ancud and Guapi Quilán); 4, glacial deposits; 5, beach, estuarine and fluvial deposits; 6, Eocene Metalqui Pluton; 7, photolineaments.

Coastal Cordillera. Cenozoic deposits in Chiloé Island are exposed on both sides of a north-south orientated axis of metamorphic rocks (Cordillera del Piuchén) (see figure) which have been correlated with the Bahía Mansa Metamorphic Complex exposed in the Coastal Cordillera west of Osorno (40°45'S) (Antinao *et al.* 2000). Along the west side of this metamorphic axis, sedimentary (mostly marine) and volcanic sequences of Oligocene to Pliocene ages overlie the Palaeozoic basement. In contrast, along the eastern side of the island there is an extensive cover of mostly glacial and sedimentary marine Quaternary deposits (Muñoz *et al.* 1999; Sernageomin 2003). The oldest sedimentary unit, which is exposed on the western side of the metamorphic ridge, corresponds to the continental Caleta Chonos Beds and is probably older than late Oligocene (Antinao *et al.* 2000). The stratigraphic succession continues with the Chonchi Beds (Quiroz *et al.* 2003), exposed along the coast next to Chonchi on the eastern side of the island, which contain fossil marine invertebrates and trunks indicating an Oligocene-Miocene age. The next younger deposits correspond to the early to middle Miocene marine Lacui Formation (Valenzuela 1982) and the Cucao Beds on the western side (Quiroz *et al.* 2003), which are correlative with the Cheuquemó Beds and Santo Domingo Formation exposed further north in the Valdivia-Osorno basin (Duhart *et al.* 2000). The youngest sedimentary unit along the central western coast is a marine sequence forming a thin and almost continuous coastal belt of subhorizontal deposits, assigned to the Pliocene epoch (Watters & Fleming 1972). Volcanic rocks of late



Oligocene to Miocene age, including basalts, basaltic andesites and andesites, are exposed in the northwestern (Ancud Volcanic Complex) and the southwestern (Guapi Quilán Complex) tips of the island. Volcanism was partially synchronous with the marine sedimentation so that, in the north the volcanic rocks are interstratified with the Miocene marine sequences (Quiroz *et al.* 2003). The east-west segmentation of the island is related to north-south trending faults that controlled the uplift of the Palaeozoic basement in the central segment (Piuchén Range). Volcanic activity was controlled by the intersection of such lineaments with NNW-orientated strike-slip faults.

Reference

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