

TRIASSIC POST-OROGENIC DYKE SWARM IN NORTH-PATAGONIAN MASSIF, ARGENTINA

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Mesosilicic dykes have been described in the eastern region of the North-Patagonian Massif by many authors. They constitute a near 200 km long and 50 km wide, regional dyke swarm of NW-SE trend. They cut the high-grade Early Paleozoic basement rocks of Mina Gonzalito Complex and a Permian plutonic complex. They are in turn cut by subvolcanic bodies of the Jurassic Marfil Complex. The dykes are composed of porphyritic andesites to trachyandesites with seriate groundmass. They contain frequent enclaves of the mentioned country rocks. Published radiometric data from the dykes are K-Ar ages between 207 and 221 Ma. Zircon crystals from a dyke near Mina Gonzalito Mine were analysed in the Centro de Pesquisas Geocronológicas (USP) by LA-ICP-MS U-Pb method. Three age groups are recognised: (1) Neoproterozoic to Cambrian ages from zircons with axial ratio 2 to 3 and complex oscillatory zoning. (2) Triassic ages from crystals with axial ratio 1 to 1.5, and wide oscillatory or sector zoning. (3) Jurassic ages from the borders of zircons with oscillatory zoning and axial ratio close to 1. On the basis of textural evidence, we consider the Concordia age of 241.5 ± 1.8 Ma (MSWD = 0.01) in the second group as the crystallization age of the dyke in the swarm. The older ages are interpreted as inheritance from the Mina Gonzalito Complex country rock, and the younger age is assigned to an extensive Jurassic hydrothermal process. The NW orientation of the swarm is parallel to the previous Gondwanic orogenic axis proposed for this region. The Triassic dykes are linked to the post-orogenic magmatism associated with the extensional collapse of the Late Paleozoic orogeny, which precedes the generalized Jurassic continental extension in Patagonia.