

EOCENE DEFORMATION IN THE INTERIOR OF THE ELQUI VALLEY IV REGION, CHILE, CENTRAL ANDES

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The first geochronological evidence for an Eocene age has been obtained for the compressive deformation, registered in the Mesozoic cover of the Elqui Valley, in the interior of La Serena, northern Chile ($29^{\circ}30'$ - $30^{\circ}00'$ S, $70^{\circ}30'$ - $71^{\circ}00'$ W). The deformation is observed from the western margin of the Cordillera Principal, to the coast, in the following structures; a) a N-S trending elevated block (positive flower structure or pop-up), delimited by two conjugate reverse faults of opposing vergence (Vicuña and Rivadavia Faults), with whole rock K-Ar ages of 40.5 Ma and 40.3 Ma in their mylonites, and an amphibole K-Ar age of 40.9 Ma in their cataclastic rocks, and b) an asymmetric anticline (Talcuna Anticline) with an axis sub-parallel to the above mentioned block. The deformation of the cover sequences may be associated with the inverse reactivation (inversion) of extensional faults on the border of Cretaceous basins (Marquesa & La Titora basins). The age of faulting is comparable with that of the Middle-Eocene transpressional phase, recorded along the whole length of the Domeyko Fault System from Antofagasta to Copiapó, contemporaneous with the Incaic phase of the Andes deformation.