

## EXISTENCE OF LATE LOWER CRETACEOUS ROCKS IN ANTOFAGASTA, CHILE

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Late Lower Cretaceous rocks have not previously been described from the Antofagasta area (23°-24°S/69°30'-70°W). In this paper, a late Lower Cretaceous age is assigned to a volcanosedimentary sequence (Quebrada San Cristobal Strata), that crops out in this area. The c. 2000 m thick sequence mainly comprises andesitic breccias, andesites and rhyodacitic to rhyolitic ignimbrites, with intercalations of clast-supported conglomerates, volcaniclastic sandstones, and subordinate finely-laminated lacustrine limestones. Although the base of this sequence has not been recognised to date, it is suspected to lie on Upper Jurassic andesites (La Negra Formation). The top of the sequence is covered, apparently in erosion and angular unconformity, by Upper Cretaceous volcanic rocks (Quebrada Mala Formation). The sequence is intruded by granitoids (Cerro Picudo Unit) of 100 to 110 Ma, radiometric ages (K-Ar in biotite) of 89 to 98 Ma have been determined for the strata, which allow a late Lower Cretaceous age to be assigned. The sequence was deposited under continental conditions within intramontane basins. The volcanic rocks show a calc-alkaline signature, indicating formation in a subduction related volcanic arc. The outcrop distribution suggests a NE/SW trending arc, emplaced to the east of the pre-existing Jurassic volcanic element. The unconformity, which separates this unit from the overlying Upper Cretaceous rocks, implies a tectonic event, which has been recognized in northern Chile between 83-84 Ma.