

Stratigraphic and structural features of the Cambrian deposits at the Pedernal Range, Eastern Precordillera, San Juan Province, Argentina

PERALTA, GÓMEZ G.A. and CARDINALI, A.L.

This contribution deals about of the stratigraphic framework and structural features of the Cambrian rocks exposed at the jaspe Creek and Potrerillos Valley, at the Pedernal range, which is located at the southern end of the structural arch so called "Villicum-Zonda swell", belonging to the structural setting of the Eastern Precordillera. In this scene, the Cambrian sequence underlain conformably the Ordovician fossiliferous limestone of the San Juan Formation, mean-while the base of this sequence remains unknown because the regional Zonda fault, which eliminate the lowermost part of the La Laja Formation. The contact with the underlying basement is nowhere exposed, but there is indirect evidence for a metamorphic basement from xenoliths within Miocene volcanic rocks, into the Central Precordillera structural setting. At the jaspe creek, the Cambrian sequence is better exposed and more complete than in the Potrerillos creek, in the former comprised, from the base upwards, marly limestones and limestones of the La Laja Formation, 500 m thickness, which includes mudstones, oncolitic and oolitic fossiliferous wackestones, intraclastic and oncolitic packstones, marls and calcareous siltstones. This deposits bears trilobites of the *Bonnia-Olenellus*, *Plagiura-Poliella*, *Albertella*, *Glossopleura*, *Bathyriscus-Elrathina*, *Bolaspidella* Bionzones, which ranges in age from lower Cambrian to uppermost middle Cambrian. This unit is succeeded transitionally by the overlying dolomites of the Zonda Formation, 370 m thickness, the upper boundary is given by the abrupt occurrence of abundant stromatolites at the base of the La Flecha Formation. This unit apparently is unfossiliferous, and its age, because its stratigraphic position between the well-dated deposits of the La Laja Formation and the overlying La Flecha Formation, which bears trilobites franconian in age, will comprise the span between the Middle-Upper Cambrian boundary and the lower part of the Franconian. The La Flecha Formation, 700 m thickness, is characterised by abundant stromatolites through the whole sequence (LLH and SH) and trombolites, which occurrence marks the boundary with the underlying Zonda Formation and the Upper boundary with the overlying La Silla Formation is transitionally. This unit is late Franconian (*Plethopeltis cf P. saratogensis*) to late Trempealeau in age (Saukia Biozone). Finally, the La Silla Formation, 330 m thickness, is mainly composed of limemudstones and wackestones, which upper boundary is transitionally respect to the fossiliferous limestones with an abundant open marine fauna which is typical of the San Juan Formation, upper Tremadocian? to Arenigian in age. From a structural point of view, the main structural feature it is the Zonda Fault, which striking at the western border of the Villicum-Zonda-Pedernal structural arch. In this scene the style of deformation, generally characterised by N-S striking imbricate faults verging westward, affects the whole carbonate Cambrian to early Ordovician sequences, as well as the siliciclastic deposits of the Rinconada Formation (Silurian), Retamito Formation (Carboniferous) and the Cenozoic continental deposits. In this way, a fault-bend folding structural mode has been interpreted, which affect the whole sedimentary sequence, for this reason the amounts of bedding-parallel displacement are unknown, and the thickening of the sedimentary pile within the thrust sheets is difficult to estimate.