

Review of the Argentine Precordillera Cambrian System

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The Cambrian rocks of the Argentine Precordillera are analyzed in space and time getting a new interpretation of the precordilleran continental margin. The lithostratigraphy and biostratigraphy are placed in a nonpalinspastic paleogeographic model according with the structural distribution of the Precambrian rocks. In the later Early Cambrian there started an open carbonate platform with located preceding siliciclastic and evaporites of the intracontinental graben system or sinrift. A rimmed platform with lagoons and marginal terrigenous or coastal sabkha facies developed in the Middle Cambrian. While shoals or sand-oolitic barriers were as built at the west margin of the shelf, evolving seaward with an open subtidal platform. During the Late Cambrian a broad peritidal platform prograded to the west in the basin, bounded by sand barriers or tidal islands mainly in the southern areas, the northern areas remaining more or less restricted. In the Cambrian-Ordovician boundary a new rimmed platform was established but the platform margin retreated to the east as a flooding event.

The structural collapse of the carbonate platform began in the latest Cambrian, first in the southern areas and then in the Early Ordovician in the western Precordillera producing a tectonically active olistostromic slope.

The Precambrian outcrops in the western Pampeanas Range, interpreted as the Cambrian basin basement, are responsible for the distribution and facies changes in the paleogeographic evolution of the basin.

The biostratigraphic scheme based on trilobites is separated into a restricted shelf biozones to the East, characterized by sparse, endemic and low diversity polymeroid faunules. To the West an outer open shelf biozones is characterized by abundant, high diversity, mixed endemic and cosmopolitan polymeroid and agnostoid faunas. The lithostratigraphic and biostratigraphic analysis allow to detect an important faunistic hiatus near the Lower-Middle Cambrian boundary correlated with the Hawke Bay regressive event in the Appalaches. The middle Olenellus Zone assemblage trilobites underlie the Ehmaniellidae assemblage of the Ehmaniella Zone. The Early Cambrian zones are lacking in the whole Precordillera.

