



ESSP-2: Las cuencas del Paleozoico Tardío en el margen oeste de Sudamérica

Permian bryozoans from Northern Chile: main components of temperate marine carbonate sequences.

Marcelo Gabriel Carrera¹, Andrea Fabiana Sterren¹, Gabriela Adriana Cisterna², Hans Niemeyer³.

(1) Córdoba, FCEFyN, CICTERRA (CONICET-UNC), Córdoba, Argentina

(2) La Rioja, CONICET-UNLAR, La Rioja, Argentina

(3) Departamento de Ciencias Geológicas, Universidad Católica del Norte, Antofagasta, Chile

In warm water euphotic oligotrophic settings rapidly growing green calcareous algae and invertebrates with photosymbionts (corals, sponges) and active abiotic precipitation mud-ooids-cements, are called the "Photozoan association". Modern cool water temperate platforms are mainly constituted by benthic invertebrates and coralline algae that feed through a variety of heterotrophic means named the "Heterozoan associations". They produce particulate-type carbonate sedimentation which represents the main source of platform accumulation. The terms "foramol" (foraminifer-moluscan) or "bryomol" (bryozoan-moluscan) are commonly used according to main biotic components. This composition is observed in mixed carbonate-siliciclastic successions of the Cerro El Árbol Formation (early Permian) from Antofagasta, Northern Chile. This unit is mainly characterized by tobaceous conglomerates and sandstones, calcareous red sandstones and shales in the lower part and predominance of mudstones and limestones towards the top. Three invertebrate assemblages composed of brachiopods, bivalves, gastropods, crinoids and bryozoans have been identified. Bryozoans are abundant and dominant in the middle part of the unit, forming coquina-like accumulations together with crinoid fragments. The bryozoan fauna studied is composed by a ramose, small (no more than 3 cm long), single cryptostome species. Macroscopic samples and the thin-sections show specimens well preserved, moderately fragmented, simple stalks or dichotomously branched colonies. Similar bryomol type association was observed in the neighboring basins. In the Huentelauquén Formation (central Chile), typical temperate to cold water invertebrate assemblages are composed by brachiopods and foraminifers (Méndez-Bedia et al., 2009). A most diverse fauna from the Arizaro Formation (northwestern Argentina) that includes brachiopods, bivalves, gastropods, bryozoans, corals, crinoids and foraminifers (Aceñolaza et al., 1972), can be also considered a similar association type. Coeval sequences from Perú-Bolivia (Copacabana Formation) and Venezuela (Palmarito Formation), show different, more abundant and diverse macro and micro faunas with foraminifers, fusulinids, conodonts and palynomorphs (Badyrka et al., 2013; Laya and Tucker, 2012). Further studies of these assemblages in the paleopacific carbonate platform will allow understanding the paleoclimatic conditions along the latitudinal gradient during the Pennsylvanian-Cisuralian.