



## New insights for the paleobiogeographic analysis of the Early Ordovician graptolite fauna of northwestern Argentina

B. A. VENTO<sup>1</sup>, B. A. TORO<sup>1</sup> and J. MALETZ<sup>2</sup>

*Trichograptus dilaceratus* (Herrmann), *Acrograptus gracilis* (Törnquist), *Expansograptus urbanus* (Monsen) and *Corymbograptus v-fractus tullbergi* (Monsen) are recognized and described in Argentina for the first time, reinforcing the graptolite faunal affinities with Baltoscandia. The studied specimens come from the Quinilican and Agua Chica sections, located at the northern extreme of the Aguilar Range in the Cordillera Oriental (Jujuy Province). The graptolites are preserved in fine to medium grained sandstones interbedded within a fine-grained succession of approximately 200m thickness, corresponding to the lower part of the Acoite Formation. The presence of *Baltograptus vacillans* (Tullberg), *Acrograptus filiformis* (Tullberg) and *Expansograptus cf. holmi* (Törnquist) allow to assign the studied levels to the *Tetragraptus akzarensis* biozone, which corresponds to the lower Floian. These levels are closely correlated with the lower part of the Lumara section located to the northeast of the studied area. The recognized species have been considered together with all the species previously documented in equivalent stratigraphic levels from the Argentine Cordillera Oriental and those recently reviewed in Baltoscandia, Great Britain and North America. A multivariate analysis (mvsp) was used and the determination of faunistic similarities was made with the classic Jaccard's index. The resulting affinity dendrogram shows stronger relationships between early Floian graptolite faunas from Northwestern Argentina and those coming from Baltoscandia. Great Britain is located in an intermediate position in the similarity dendrogram, and shows less affinity with northwestern Argentina. In addition, weak affinities with North American faunas are observed. The statistical analysis confirms the paleobiogeographic relationships previously established in other areas of the Cordillera Oriental, and supports the hypothesis that during the Early Ordovician, northwestern Argentina was located in middle to high latitudes, corresponding to the Atlantic Faunal Realm of cold water graptolite biofacies.

This work was supported by ANPCyT-PICT 1272 y CONICET-PIP 112-200801-01994.

1 Departamento de Paleontología, Instituto Argentino de Nivología, Glaciología y Ciencias Ambientales (IANIGLA), CCT-CONICET-Mendoza, Av. Ruiz Leal S/N Parque Gral. San Martín, C.C. 131, (5500) Mendoza, Argentina. [bvento@mendoza-conicet.gov.ar](mailto:bvento@mendoza-conicet.gov.ar), [btorogr@lab.cricyt.edu.ar](mailto:btorogr@lab.cricyt.edu.ar)

2 Department of Geosciences, Colorado State University, 322 Natural Resources Building, Fort Collins, CO 80523-1482, USA.