ACTA PALAEONTOLOGICA POLONICA

New Ludlovian, upper Silurian, graptolite faunas from the Los Espejos Formation, Central Precordillera, San Juan Province, Argentina: correlations and biostratigraphic remarks

Fernando E. Lopez, Osvaldo A. Conde, Alejandro R. Braeckman, Diego G. Segura, Juan M. Drovandi, Andrea J. Bueno, and Ulises Abarca
Acta Palaeontologica Polonica 69 (3), 2024: 351-370 doi:10.4202/app.01139.2024

Graptolites represent one of the most important index fossils for the lower to middle Paleozoic biostratigraphy worldwide. Compared to other regions, graptolite faunas exhibited a marked decrease in diversity in Argentina during the Silurian, what resulted in reduced and low-varied registers and denied biostratigraphic works in its territory. This study introduces new Silurian graptolite faunas from the Los Espejos Formation, Poblete Norte section, Central Precordillera of Argentina. A total of thirteen graptolitic levels were identified, containing *Bohemograptus bohemicus, Lobograptus* sp.*, Saetograptus argentinus argentinus, Saetograptus* cf. *S. varians, Uncinatograptus uncinatus notouncinatus, Uncinatograptus elsae* sp. nov., and *Uncinatograptus lisandroi* sp. nov. The occurrence of *Uncinatograptus* spp. in association with *B. bohemicus* could indicate the presence of the lower Gorstian *Neodiversograptus nilssoni* Biozone. A few meters above, the finding of *S. a. argentinus* in association with S. cf. *S. varians, U. u. notouncinatus*, and *Lobograptus* sp. suggest the presence of the lower Gorstian *Lobograptus progenitor* Biozone. The upper graptolitic beds yield specimens of *S. a. argentinus* and *B. bohemicus*, suggesting late Gorstian to early Ludfordian ages. These new graptolite faunas allow to correlate more precisely with local (Precordillera and Famatina), regional (North Western Argentina and Bolivia) and global equivalent sections. This discovery introduces new graptolite faunas, first-time recorded in South America, proposes for the first time a graptolite biostratigraphy for the Ludlow of Precordillera, and complements so far insufficient knowledge on Ludlovian graptolitic faunas of the continent in a critical time in the history of this fossil group.

Key words: Graptolithina, biostratigraphy, Gorstian Stage, Ludlow Series, Los Espejos Formation, Precordillera, Argentina, South America.

Fernando E. Lopez [felopez@unsj-cuim.edu.ar; ORCID: https://orcid.org/0000-0002-5562-7105], Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET)-Departamento de Geología, Facultad de Ciencias Exactas, Físicas y Naturales, Universidad Nacional de San Juan, Ignacio de la Roza 590 (O), Rivadavia, San Juan, Argentina. Osvaldo A. Conde [osvaldoagustin94@gmail.com; ORCID:

https://orcid.org/0009-0007-5890-4300] and Juan M. Drovandi [drovandijuan@gmail.com
; ORCID: https://orcid.org/0009-0004-3022-9444], Consejo Nacional de
Investigaciones Científicas y Técnicas (CONICET)-Instituto y Museo de
Ciencias Naturales, Universidad Nacional de San Juan, CIGEOBIO,
CONICET, Av. España 400 (N), J5500DNQ, San Juan, San Juan, Argentina.
Alejandro R. Braeckman [geobraeckman@gmail.comgeobraeckman@gmail.com
; ORDID: https://orcid.org/0000-0003-2580-3873], Diego G. Segura [seguradiegogabriel@gmail.com
; ORCID: https://orcid.org/0009-0006-3102-0735], Andrea J. Bueno [andreajesusbueno @gmail.com
; ORCID: https://orcid.org/0009-0008-4973-5223], and Ulises Abarca [likogx89@gmail.com
; ORCID: https://orcid.org/0009-0009-7036-9288], Departamento de Geología, Facultad de Ciencias
Exactas, Físicas y Naturales, Universidad Nacional de San Juan, Ignacio de la Roza 590 (O), Rivadavia,
San Juan, Argentina.

This is an open-access article distributed under the terms of the Creative Commons
Attribution License (for details please see creativecommons.org), which permits unrestricted use,
distribution, and reproduction in any medium, provided the original author and source are credited.

Full text (3,754.5 kB)