

Plant remains from the Devonian of San Juan, Argentina

Eliana Coturel ^{*}1, Jonatan Arnol ²

1 Museo de La Plata, Facultad de Ciencias Naturales y Museo, Universidad Nacional de La Plata (UNLP) – División Paleobotánica - Paseo del Bosque s/n CP 1900 La Plata, Argentina

2 Centro de Investigaciones Geológicas, Universidad Nacional de La Plata (CIG) – Argentina

Throughout the Devonian occurred the most important stages of plant propagation on land and their subsequent evolution, yet the extent of this process is far from being completely understood, mainly by the scarcity of the register. The fossiliferous localities of the Devonian of Precordillera, in Argentina, have provided sterile or poorly preserved remains of fossil plants and, very rarely, palynomorphs. Associations of low diversity have been described, composed of primitive vascular plants and herbaceous lycophytes. Here we present new samples from the Punta Negra Formation, collected from the Precordillera of San Juan province. Punta Negra Formation lays over the marine sediments of the Lower Devonian Talacasto Formation with a transitional limit and reaches 1000 m thick. The lower limit of the Punta Negra Formation is diachronic, being older in the southern localities. Plants come from four localities. Sandstones from the Río San Juan locality yielded a compression of stem with petiolate, divided microphylls, assignable to *Haskinsia* Grierson and Banks 1983. It is noteworthy that this is the first record of a lycopsid with preserved leaves from this unit. Southern, nearby Puesto Bachongo fossil remains were found comparable with the bryophyte *Sporogonites* Halle 1916. These samples consist in an ovoid-globose capsule which shows longitudinal costae in the middle sector, which resembles *Sporogonites excellens* Frenguelli 1951. Sterile lycophyte stems were found in both localities. Plant debris, consisting in smooth and ridged sterile axes, putative sporangia and isotomous bifurcated stems, was also found. The association is in general consistent with the previously described for the unit, and the discovery of better preserved taxa allow us a more detailed comparison to elucidate the age of the deposits. *Sporogonites* was found in the Lower Devonian of Argentina, Australia, Belgium, and Brazil, and younger strata from Spain. The lycophyte *Haskinsia*, on the other hand, was widespread in the Middle Devonian, with a species also found in Sierra de la Ventana (Buenos Aires Province, Argentina). The presence of both taxa is coherent with the age given to Punta Negra Formation and the diachronic nature of its base, could help in the stratigraphic correlation between localities. Lastly, the finding of these new material encourages us to continue the research in this large unit, which could lead to a better understanding of the expansion of the early land plants.

* Speaker