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Middle-Upper Devonian microflora from a borehole in northwestern Argentina Sol Noetinger¹, Mercedes di Pasquo²
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Devonian deposits extend over the subsurface between Bolivia, Paraguay and Argentina, represented by shale and sandstone facies deposited mainly in a shallow marine environment. This study presents a survey of the microflora recovered from six core samples of the Tonono x-1 well (c.a. 63° 38', 22° 17') located in northwestern Argentina.

The considered stratigraphic section ranges from the Late Eifelian to Early Frasnian. The total microflora is composed of 87 species, represented by diverse palynological groups such as trilete spores (46 species), cryptospores, palaeomicroplankton including several Prasinophycean, Chlorophycean and acritarch taxa (31 species), chitinozoans (10 species) and scolecodonts.

Among them there is new taxa yet to be described. The stratigraphic distribution of the species allowed distinguishing three associations. The palynoassemblage **P1** (3946.5-3638.5 m), where the general preservation of the organic matter is very poor with relatively high level of thermal maturity, which leads to a small concentration of palynomorphs. Nevertheless, some stratigraphically important species are recognized such as the spores *Grandispora douglstownense*, *Dibolisporites eifeliensis*, *Verrucosisporites* sp. cf. *V. loboziakii* and *Acinosporites* sp. cf. *A. macrospinosus*, and the chitinozoans *Alpenachitina matogrossensis*, *Ancyrochitina simplex*, *Alpenachitina* sp. cf. *A. eisenacki* that suggest a middle to late Eifelian age for this assemblage. The palynoassemblage **P2** (3367.35-3285 m) presents a better preservation than the level below. Regarding on the presence of *Geminospora lemurata*, *Aneurospora greggsii*, *Biharisporites parviornatus*, *Raistrickia aratra* and *Leiotriletes balapucencis*, and on the age of the assemblage P1 (300 m below), an early-middle Givetian age is proposed. The palynoassemblage **P3** (3073.2- 3137.5 m) comprises predominantly marine elements (90%). There is a high proportion of AOM and the preservation of the palynomorphs is fairly good. Only few key species are recognized such as *Acinosporites* sp. cf. *A. eumammillatus* together with the chitinozoans *Angochitina katzeri* and *Angochitina mourai* that support an early Frasnian age for this assemblage, reinforced by the notably increase of marine elements and AOM between the P2 and P3, which would have occurred as a response to a maximum flooding event during the Frasnian, probably related to major global eustatic changes.