

PALYNOSTRATIGRAPHY OF THE PENNSYLVANIAN AND PERMIAN INTERVAL OF THE PARANÁ BASIN: AGES AND ADVANCES

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The geochronology of the Pennsylvanian and Permian deposits of the Paraná Basin has been traditionally supported by biostratigraphical data, due to few radiometric datings are available. Vertebrates, invertebrates, plant remains and palynomorphs (spore-pollen species) are commonly recorded at distinct levels, in variable number and preservation. However, none constitutes fossil guide of the international stratigraphic column yet, such as conodonts and foraminifers, commonly found from Euramerican sequences. As result, an accurate geochronological assignment is limited, which is generally based mainly by comparisons with other Gondwana assemblages. Spore-pollen species of palynomorphs have been traditionally used as a tool for biostratigraphic purposes in this interval, due to their abundance and widespread distribution, among others reasons. Recent U-Pb radiometric datings have furnished geochronological calibrations to certain horizons, improving the time span for the related biostratigraphic units. The analysis of both stratigraphical data (palynostratigraphy versus radiometric dating) has resulted in some interesting results, among them: (i) the time span of the Late Paleozoic Ice Age in the Paraná Basin (Itararé Group) is shorter than believed before, between the middle of the Pennsylvanian and the earliest Permian (or the latest Pennsylvanian); (ii) the first records of spore-pollen species related to the *Glossopteris* Flora in Paraná Basin could be assigned to the ending of the Pennsylvanian; (iii) the most important stratigraphical mark of correlation in this interval of the basin (the maximum surface flooding, corresponding to the Palermo Formation) is well placed within the late Cisuralian, both based on palynostratigraphical and radiometric data; (iv) the upper lithostratigraphical unit of this interval (Rio do Rasto Formation) has revealed new palynological assemblages, which are well correlated with Argentinean ones, of early Lopingian ages (biostratigraphy). These assumptions are very important in terms of lateral correlation, global fossil succession and the knowledge of the geological evolution of the basin. As example, according some of these data, the origin and dispersion centre of certain taxa could be attributed to the South American areas. By other hands, on an alternative (and/or mandatory) perspective, Gondwana palynological (and paleontological) associations should be aged according to the same methodological criteria than those applied to the Paraná Basin sedimentary deposits.

KEYWORDS: OCCIDENTAL GONDWANA, BIOSTRATIGRAPHY.