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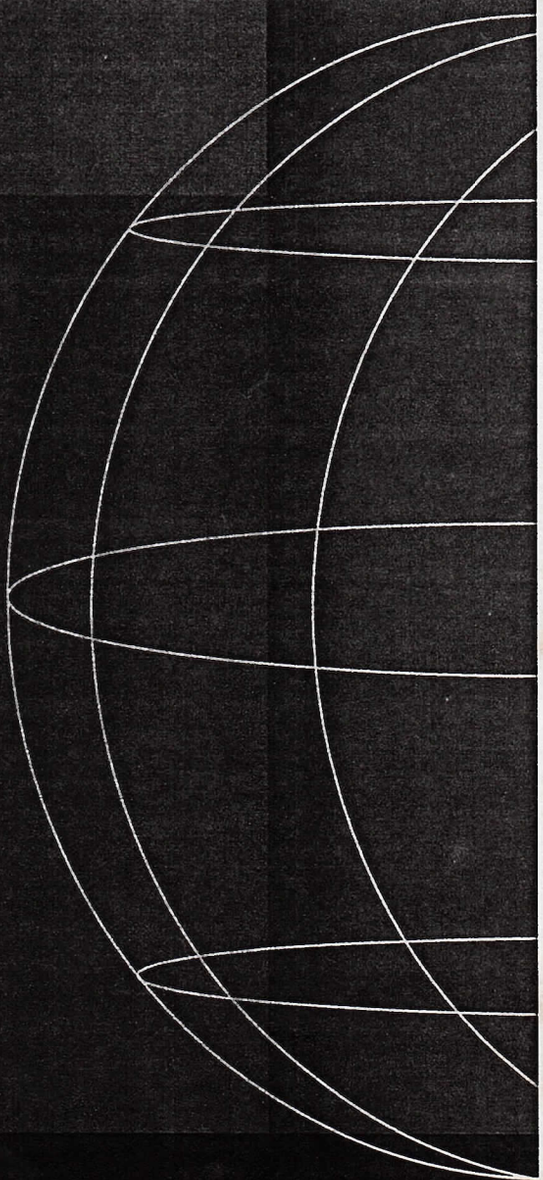

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LATE CARBONIFEROUS-EARLY PERMIAN TAPHOFLORAS FROM NORTHEASTERN PARANÁ BASIN'S GLACIAL SUCCESSION IN BRAZIL AND COMPARISONS TO THE ARGENTINE RECORD*

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The macrofloristic occurrences in the Permo-Carboniferous glacial succession are relatively rare in the Tubarão Group of the Paraná Basin, Brazil. However, new paleobotanical studies in the São Paulo State (FAPESP Project 97/03639-8) have added important data. They substantiate new floristic comparisons, specially to the Argentine record, for stratigraphic and paleophytogeographic purposes.

In an old coal mine at Itapeva (Santa Marta Farm), *Botrychiopsis plantiana*, *Nothorhacopteris* cf. *N. argentinica*, *Noeggerathiopsis* cf. *N. spathulata*, *Samaropsis itapevensis*, *Sphenophyllum* cf. *S. churulianum*, *Koretrophyllites* and *Paracalamites* were found. Not far from the mine (in the Morro Alegre Farm), the coal bed shows very badly preserved large lycopod stems. The macrophytofossils from the old Monte Mor coal mine suggest a taphonomic association of hydro-hygrophilous and meso-?xerophilous plants: *Botrychiopsis* cf. *B. plantiana*, *Nothorhacopteris* cf. *N. chubutiana*, *N.* cf. *N. ovata*, *Ginkgophyllum*, *Noeggerathiopsis hislopii*, *Samaropsis seixasii*, *Cordaicarpus barbosanus*, *Buriadia heterophylla*, *Paranocladus ?fallax*, *Bumbudendron* cf. *B. nitidum*, *Bumbudendron* cf. *B. paganzianum*, *Brasilodendron pedroanum*, *Sphenophyllum* and *Paracalamites*. These *taxa* occur distributed in three phytozones in Argentina (NBG, Interval and *N.chubutiana* zones), ranging from Westphalian to Asselian/Sakmarian. Palynological data indicate a possible Westphalian age, which would correspond to the NBG Phytozone. The conifers, *Sphenophyllum* and *Koretrophyllites* from Itapeva/Monte Mor, found at higher stratigraphic levels in other Gondwanic regions, possibly had already migrated from tropical regions to the Paraná Basin during the warmer coal forming period in Westphalian, but they did not reach the Argentine basins, nor survived throughout the following cooler episodes.

The recently discovered Salto and Bandeirantes Road taphofloras are characterized by mosses of a possible tundra vegetation preserved in ritmites with dropstones. The Bandeirantes Road beds belong to the same palynozone as the Monte Mor and Itapeva taphofloras; the Salto beds correspond to the next palynozone, possibly Stephanian in age.

The Cerquilho taphoflora and the new occurrence named "Capivari River" bear abundant *Gangamopteris*, *Rubidgea*, *Noeggerathiopsis*, platispermic seeds and sphenopsids (e.g. *Phyllotheca*), which are typical early Permian elements of the *Glossopteris* Flora. The Capivari River beds are below the last glacial diamictites, but those from Cerquilho may be slightly younger and constitute a matter for debate. *Palaeovittaria*, *Arberia minasica*, *Arberiopsis (Samaropsis) rigbyi*, *Hirsutum* and possible *Glossopteris* were also found in this locality. These two last taphofloras can probably be correlated to the lower *Gangamopteris* Zone of the Paganzo Basin, but there are important differences (e.g. presence of *Rubidgea*, distinct glossopterid fructifications and leaf venations; absence of ferns, conifers, etc.), in part, possibly controlled by more humid coastal marine environments in the Paraná Basin.

In conclusion, the South Brazilian and Argentine macrofloras, although relatively similar in many aspects, cannot be directly correlated.

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1 - IG/USP; 2- UnG; 3- UNESP/Rio Claro; 4- IG/SMA; 5- UniABC; 6- UNICAMP; 7- CENPÁLEO/UnC