

## CONSIDERAÇÕES FITOGEOGRÁFICAS DA ORIGEM DE GLOSSOPTERIDEAE

### PHYTOGEOGRAPHIC CONSIDERATIONS ON THE GLOSSOPTERIDEAE ORIGIN

Phytogeographic considerations on the origin of the Glossopterideae

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Striated pollen typical of Late Pennsylvanian/Permian assemblages of Gondwana (e.g. *Protohaploxipinus*, *Complexisporites* and *Striomonosacites*) existed in earlier Pennsylvanian time (i.e. late Namurian-Westphalian) in some areas. This conclusion is based on recent reevaluations of the chronostratigraphic position of Late Paleozoic assemblages of the Amazonas basin (Picarelli *et al.* 1993; Marques Toigo *et al.* 1995) and more refined biostratigraphies of marine microfaunas (Altiner & Savini 1989; Lemos 1992). Assemblages with some striated, bisaccate pollen were also found in beds of Westphalian to (?) early Stephanian age in Algeria (Abdesselam-Rouighi *et al.* 1995). A few pollen assemblages dominated by some typical Permian striated pollen have been reported from the early and middle Pennsylvanian (Namurian-Westphalian) of China, Canada and former USSR (Urals). All these early records are from regions characterized by warm, semi-arid and seasonal paleoclimates. Zhou (1994) suggested that the northern hemisphere records represent a subtropical belt (approximately 30° N), where the first conifer-type gymnosperms evolved in xerophytic communities. Considering the proven relationship between striated pollen and the Glossopterideae (Pant 1977), it is here suggested that the Gondwana assemblages with these pollen types represent the record of *Glossopteris*-type plants. Hence, some parts of the NW region of Gondwana (parts of northern Africa) appear to have been the area first occupied by Glossopterids from which they later dispersed over rest of Gondwana. The aforementioned hypothesis implies that (a) plants producing striated pollen grains had a more or less simultaneously origin in two different regions of the globe and (b) the Glossopterideae originated from plants adapted to warm and seasonal paleoclimate conditions. These implications are in accord with (a) the hypothesis of Meyen (1987) on the parallelism between striated pollen grains found in both hemispheres of the Late Paleozoic, (b) the hypothesis of Leary (1993) on the evolution of Glossopterids from forms with *Lesleya*-type leaves which inhabited dry areas of the paleotropics, and (c) the hypotheses of Banerjee (1991) and Rayner (1994) on the relationship between the expansion of the Glossopterideae and warm paleoclimate conditions in Gondwana.

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