

GENUS *EUSPHENOPTERIS* NOVIK, 1947: OCCURRENCE IN THE SANTA MARTA
TAPHOFLORA (ITAPEVA, SP), NEO-CARBONIFEROUS OF THE ITARARÉ
SUBGROUP, PARANÁ BASIN, BRAZIL ¹

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The Santa Marta Taphoflora, Municipality of Itapeva (SP), corresponds to an interglacial flora of the medium-basal portion of the Itararé Subgroup. Due to its macro and microfloristic components, it is considered Westphalian. It integrates Taphoflora A of the Neo-Paleozoic paleofloristic sequence of the Paraná Basin (Rösler, 1978; Bol. IG-USP 9: 85-91) and the *Ahrensiporites cristatus* Palynozone (Souza, 2000; Ph.D. Thesis, IG/USP). It stands out as abundant impressions printed on a light-brown argillaceous siltstone of a coal-bearing delta plain facies.

Its macrofloristic elements, revised by Zampiroli (2001, M.Sc. Dissertation, IG/USP) as part of a Thematic Project¹, are the following: *Paracalamites australis*, *P. montemorensis*, *P. levis*, *Sphenophyllum* cf. *S. churulianum*, *S.* cf. *S. rhodesii*, *S.* sp., cf. *Koretrophyllites* sp.; *Botrychiopsis plantiana*, *B.* cf. *B. plantiana*, *Nothorhacopteris* cf. *N. argentinica*, *aphlebia* of *N.* cf. *N. argentinica*; *Noeggerathiopsis* sp., *Cordaicarpus zeilleri* and *Samaropsis itapevensis*.

The Genus *Eusphenopteris* Novik 1947, considered as a pteridosperm form, was detected for the first time in the Neo-Carboniferous of the Paraná Basin.

It is considered that there is a sequence of forms, from strongly dissected *Dactylophyllum*-type to large lobate pinnules such as *Botrychiopsis* type, among the Neo-Carboniferous gondwanic pteridosperm fronds. *Nothorhacopteris*, *Fedekurtzia* and *Eusphenopteris* are intermediate forms.

Initially *Eusphenopteris* fronds were mistaken for *Sphenopteris* and other gondwanic genera. However they can be distinguished thanks to diagnostic characteristics such as: tri/tetrapinnated character rounded or rounded-lobate morphology of the fully bi/trilobular pinules dichotomies from a basal vein, open flabellate venation.

Eusphenopteris were possibly hygro-mesophilous, living in bushy pteridosperm communities of the gondwanic Carboniferous. It is a Nordic genus that slowly migrated to Gondwana, having records in the Northern South-American floras (Paracas Peninsula, South of Peru and Venezuelan Andes) of Visean sediments, spreading Southwards, reaching Paraná, Paganzo and Central Patagonia basins in the Westphalian.

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