

NEW CHARACTERISTICS IN THE SUBMICROSCOPIC
EXINE STRUCTURE OF THE POLLEN GRAINS
OF NYMPHAEACEAE FROM AN EVOLUTIONARY
POINT OF VIEW

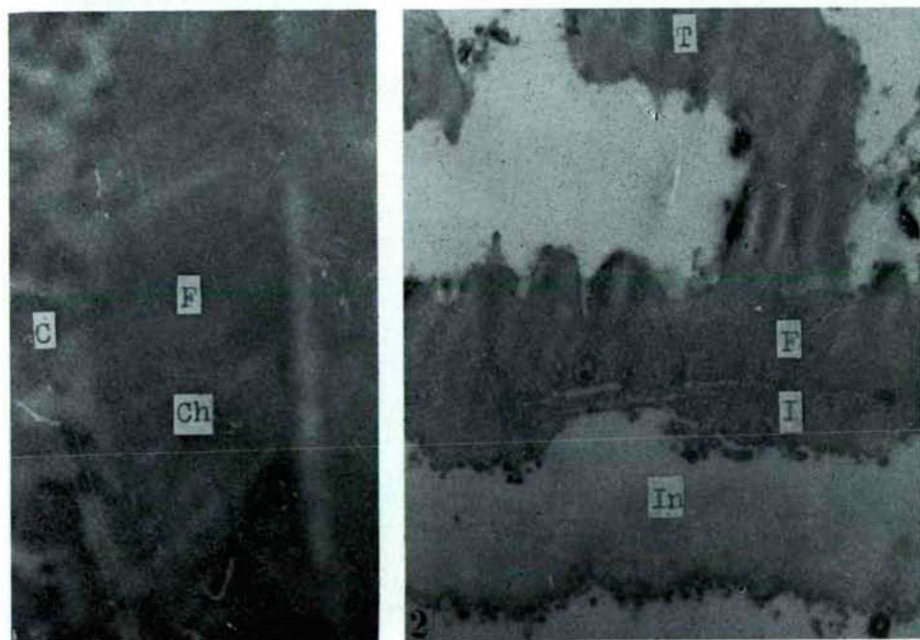
(Short communication)

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We have carried out light- and transmission-electronmicroscopic investigations on various Nymphaeaceae pollen grains. The transmission-electronmicroscopic investigations have led to two interesting results. In the foot layer of *Nuphar luteum* (L.) SM., we succeeded in observing very narrow channels, which is an unparalleled phenomenon in case of Dicotyledonopsida exines. It is a similar, but not identical characteristic that the foot layer perforated occurs in the monocotyledonous Restioaceae pollen grains (CHANDA and ROWLEY, 1967). In the exine of *Nelumbo lutea*



1. A detail of the ectexine of *Nuphar luteum* (L.) SM. In the foot layer, near the long spinae, there are narrow channels of askew course. M: $\times 100,000$.
2. Ultrastructure of the exine of *Nelumbo lutea* PERS. M: $\times 25,000$.
T-tectum, C-columellae, F-foot layer, I-interbedded zone, In-intine, Ch-channels.

PERS., we succeeded in demonstrating the interbedded zone, described by FREAN (1973) in pollen grains of the genus *Croton*.

The characteristics observed confirm to some extent the opinions concerning the evolutionary connection of Nymphaeaceae and, on the other hand, indicate that the pollen grains of Nymphaeaceae are heterogenous with respect not only to their light-microscopic morphology but to the ultrastructure of the exine as well.

References

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- FREAN, M. L. (1973): Exine stratification and fine structure of the pollen wall of *Croton gratissimus* (BURCH.) subsp. *subgratissimus* (PRAIN) BURTT DAVY. — *Pollen et Spores* 15, 353—362.

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