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# Developmental changes in raphide-forming cells of *Vanilla planifolia* and *Monstera deliciosa* 1

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[https://doi.org/10.1016/S0022-5320\(66\)80022-9](https://doi.org/10.1016/S0022-5320(66)80022-9) ↗

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Raphide-forming cells in *Vanilla planifolia* and *Monstera deliciosa* differ from those of adjacent cells, and from other known cell types. The cytoplasm of cells destined to produce raphide crystals can be differentiated very early in development. Clear coincident patterns of change in plastids, endoplasmic reticulum, vacuoles, and crystal complexes indicate an interrelationship among these subcellular components in the production of raphide crystals. A previously unknown plastid form, apparently a modification of major portions of existing plastids, is initiated with the early stages of raphide formation. Ultimately the modified portion of these plastids appear to atrophy and are lost. An internal product accumulates in the latter stages of raphide cell development. This product appears to be evolved from elements of the endoplasmic reticulum but its composition is unknown.

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- 1 Contribution No. 222 from the Charles F. Kettering Research Laboratory, Yellow Springs, Ohio. Certain of the studies were supported in part by U.S. Public Health Service Grant GM-07289.

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