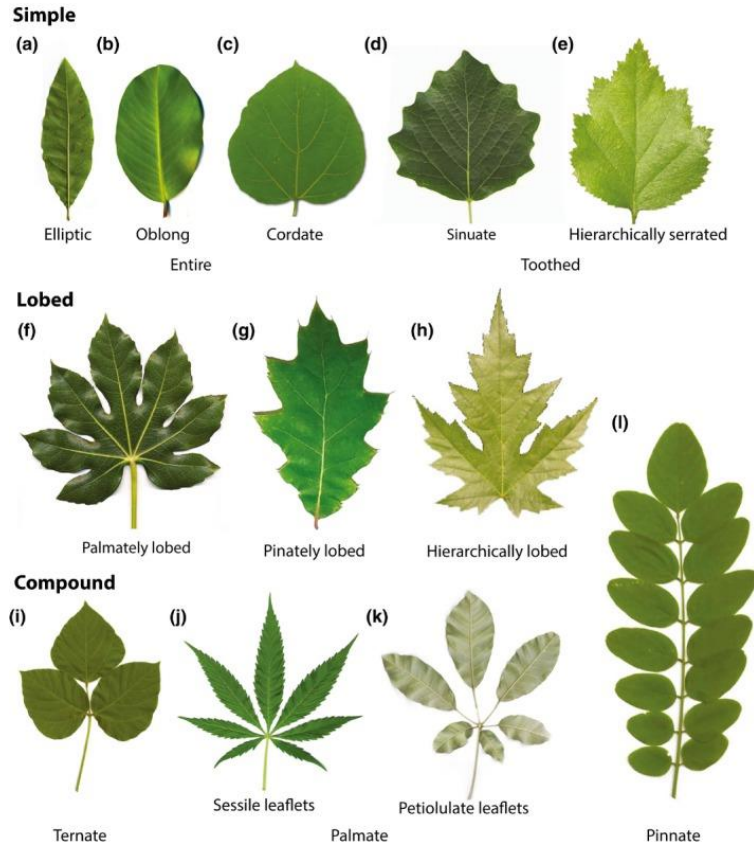


Dynamics of a leaf central vein

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Runions, A. (2017).



Polypodium formosanum fern
Nicotra et al. (2011)



Adiantum fern

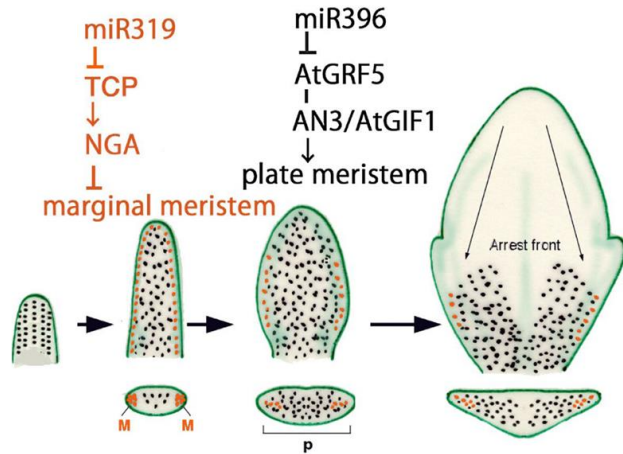


Counter example:
cucumber leaf (*C. sativus*)

Model Hypothesis

A. Marginal growth model

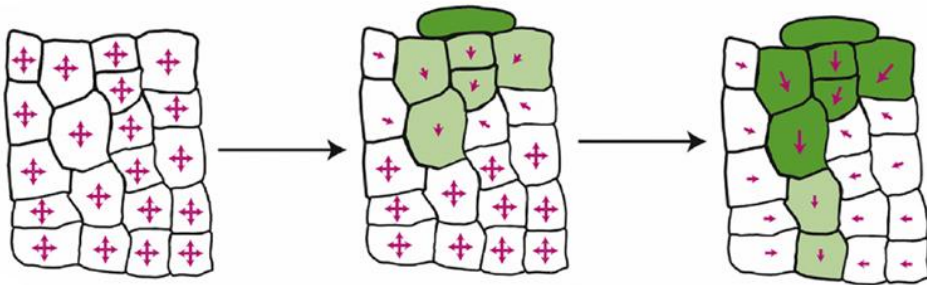
Tsukaya, H. The leaf meristem enigma: The relationship between the plate meristem and the marginal meristem. *Plant Cell* 33, 3194–3206 (2021).



B. Veins as a witness of meristematic growth

Sachs, T. The Control of the Patterned Differentiation of Vascular Tissues. in *Advances in Botanical Research* (ed. Woolhouse, H. W.) vol. 9 151–262 (Academic Press, 1981).

a



Front Propagation Method

- 1D discrete growth front with normal growth
- Symmetrical vein division
- Growth dependent on vein position
- Prefactor for the growth depending on the central vein

Vein Dependant Growth, Dvein = 20.0, S_Growth = 20.0

