Candidates For Equal Mid-Rib Morphology In The Kingdom Plantae

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Abstract, Reason for the counting of mid ribs

First of all exploration. Second as stated in *Cross Domain Morphological Mapping, Hypothesis derived from the Universal Concept Of Finite Repetance (UCFR)*, 2025: «One way to find patterns is to overlap the datasets of for equal looking morphologies (that are annotated by humans) of vastly diffrent kindoms, like protista and plantae. And if the branching looks similar, then there has to be a gentic pattern of codons that is equal in both specimens Genome. [...].» In this paper we therefore do so for the *plantae* kingdom, and group equal morphologies (equal-mid rib counts) since we found out, in the paper mentioned above, that the mid-rib count is the only stable trait to meisure in a leaf, that is not varying from the left to the right side of the symmetry-axis we imagine. And even if we dont imagine a symmetri-axis, using the morphology of the leaf to create a self-referential symmetry it willalso vary from the one side to the other. This paper concerns itself with finding suficient equal plant morphologies in the kingdom ***plantae*** in order **to cross domain map the genes of** those plants with **animalia, fungi and protista morphology**.

Mid-Rib

Is defined as the ‘o-Tree’ (*The Universal Concept of Finite Repetance (UCFR), A Discrete Reformation of Mathematical Foundations and Natural Law,* 2024), in the UCFR. One mid-point that branches out in a star like manner. The branches center is this midpoint. Thats where the branches connect and branch off from.

Mid-Rib Counts List

Leafs with **1 mid-rib**:

1. Ficus lyrata
2. Spathiphyllum wallisii
3. Salix caprea
4. Orbipholia
5. Codiaeum variegatum
6. Euphorbia pulcherrima
7. Maranta Leuconeura
8. Cordyline fruticosa
9. Hypoestes phyllostachya
10. Aglaonema

(There are plenty of plants with 1 mid-rib)

…

Leafs with **2 mid-ribs:**

?

Leafs with **3 mid-ribs**:

1. Alocasia macrorrhizos
2. Caladium (some, there are many diffrent varieties)
3. Oxalis triangularis
4. Philodendron Bipinnatifidum
5. Ranunculus acris (seemed like 5 mid-ribs, while zooming in revealed 3 mid-ribs, so I made a mistake in my paper *Cross Domain Morphological Mapping, Hypothesis derived from the Universal Concept Of Finite Repetance (UCFR)* , doi:10.5281/zenodo.15650760, stating it were 5 mid-ribs)
6. Pelargonium graveolens

…

Leafs with **4 mid-ribs**:

?

Leafs with **5 mid-ribs**:

1. Acer palmatum
2. Hedera helix
3. Victoria Amazonica (seemed like 8-9 mid ribs but a lit trough picture revealed branching off from 5 mid-ribs)
4. Populus tremula

…

Leafs with **6 mid-ribs**:

?

Leafs with **7 mid-ribs**:

1. Crystal Anthurium
2. Ficus afghanistanica
3. Tilia platyphyllos
4. Plantago major
5. Acer saccharum
6. Begonia (some)
7. Philodendron micans

…

Leafs with **8 mid-ribs**:

?

Leafs with **9 mid-ribs**:

1. Pilea Peperomioides

2. Begonia maculata

3. Peperomia argyreia

Leafs with **10 mid-ribs**:

?

Leafs with **11mid-ribs**:

1. Philodendron gloriosum (but also others with 13 mid-ribs, even if this is branched off and something is wrong with the count the number of mid ribs can not be even)

Difficult to analyze/edge cases are plants that dont have leafs:

1.1 Dracaena trifasciata (it looks like it has 1 mid-rib, but the camouflage makes it an edge case for morphological analysis), 1.2 Opuntia ficus indica doesnt show how many veins or mid-ribs it is made of from the exterior.

1.3 Senecio Rowleyanus

1.4 Begonia rex escargot

the leaves are unlike any other. They are rolled up like a spiral or snail shell (I tried counting from many pictures of their leafs their mid-rib count is somewhere between 13-17)

Conclusion

After this analysis, even if its size is limeted die to only one person analyzing and having time constraints we clearly see the trend of nature to have odd mid-rib counts.

For some reason nature favors **odd mid-rib counts (1, 3, 5, 7, 9, 11, 13...)** over **even mid-rib counts (2, 4, 6, 8...)** in leafs.

I now how found such a counter example: **begonia maculata**. Its leafs have either (6, 8, 10) mid rib counts according to the specimens I have encountered.

The reason the author finds is that every pair of branches is even but there is, most of the time, and apex as well that has to receive nutrients and stability and therefore for every even mid-rib there has to be an additional one, wich makes the overall count of mid-ribs odd and the leaf overall symmetrically looking (if held onto a mirroraligned with the stem of a leaf). Whereas the even mid-rib count leafs of begonia maculata look assymetrical (if held onto a mirror aligned with the stem of the leaf).

Also if the leaf were to grow along and fill all the spaces between the mid ribs with vein branching, in a leaf with evenly many mid-ribs. The surface area would be smaller then when there is an additional mid rib that veins can branch off from torwards the other mid-ribs.

So leafs with odd mid-rib counts have a greater surface area and symmetry (if held onto a mirror aligned with the stem of the leaf).

One might counter argue, well not all plants have one leaf that fills its surface area like a closed leaf, some like monsteras have holes between their midribs. And thats right. Ranunculus acric as well has not a closed surface leaf that includes all 3 mid-ribs. But again they have odd mid-rib counts. Now **begonia maculata** shows the opposite, and if held onto a mirroraligned with the stem of the leaf it seems rather asymmetrical. Still there are many more examples of seemingly symmetrical leafs with odd-mid-rib counts (if held onto a mirroraligned with the stem of the leaf).

The reason to this? Unclear, but likely favored by nature, altough there are some exceptions.

Method

No pictures are included as the bredth of species included cannot be aquired by the author due to temporal constraints. This paper therefore used the world wide web to search for 20 pictures of every single leaf of the specimen named. It was tried to search for high-resolution pictures.

Also the paper looks at diffrent sized leafs of the same specimen. And recognizes that mid-rib counts do not vary.

Connected Works and Sources

- **B. L. S. Riedel,** 2025 *, Cross Domain Morphological Mapping, Hypothesis derived from the Universal Concept Of Finite Repetance (UCFR)*, doi: 10.5281/zenodo.15650760

- **B. L. S. Riedel,** 2024 , *The Universal Concept of Finite Repetance (UCFR), A Discrete Reformation of Universal Concept Of Finite Repetance and Euler Trees, all the same underlying Mathematical Foundations and Natural Law*, URL: https://zenodo.org/records/15453948, doi: 10.5281/zenodo.15453948

- **B. L. S. Riedel,** 2025 , *Goethe's Urpflanze (primordial plant) the same as the self generative, self similar and enveloped structure,* URL: https://zenodo.org/records/15616229, doi: *10.5281/zenodo.15616229*

$*^1$it shall be excused that the author uses self-refrencing, as it not possible to do so if no relating works exist.
$*^2$The paper invites to collaborate