

Cross Domain Morphological Mapping, Hypothesis derived from the Universal Concept Of Finite Repetance (UCFR)

I am currently working on a project to count veins in leaves and find out how many each leaf has of one species and connect this to the DNA of the species. Then I can find out which triplets of base pairs (codons) encode a vein in a leaf, and from this I will find out in the human genome how branches are created and how many base triplets encode this.

We do not all have a nervous system, we all have fluids and we all have genes, plants, fungi and humans and animals. And since not all of us have auxin it cannot be auxin in all of us. We have hormones, plants have hormones, animals have hormones and fungi do have hormones. So it can be hormones, it can be electricity, it can be fluid and it can be our genes that contribute to a congenital morphology without environmental factors yet in mind. It is as simple as that.

Holistic inflation followed by Compression trough equalities

We delimit what cannot be universal, by holistic logic, and point to the few fundamental elements that are actually common between the plant kingdom (plantae), humans and animals (animalia), the fungus kingdom (fungi):

- Genes (and their expression)
- Fluids
- Hormones
- Electrostatics/bioelectric signals

But if we include algae (protista), they do not produce hormones nor have all of them bioelectric signals!

Then for plant kingdom (plantae), humans and animals (animalia), the fungus kingdom (fungi) and algae (protista) the branching and morphology can only come from:

- Genes (and their expression)
- Fluids
- Electrostatics

But if we take into account that the genes can only unfold in a fluid, then the cause are still the:

- Genes (and their expression)

- Electrostatics (are somewhat impossible to not have at least at one layer of abstraction, electro statics are on molecular up to macroscopic level at play and they are not random but the plant morphology is far more determined. The branches or veins can be quite symmetrical or with equal distance spaced).

For this reason we are left with the genes. Almost as if there is a rule that unfolds in the genes not according to the genes but to the constraints from the environment. Still they unfold in a very equal way in the same specimen of plant, fungi, algae or animal. Thus, even though there is this environmental element, we have to look at the root of it all.

The genes, the alleles, the codons.

So what we are left with are:

- The genes (and their expression in the optimal environment and the constrained environment).

How to find the pattern?

One way to find patterns is to overlap the datasets of for equal looking morphologies (that are annotated by humans) of vastly different kingdoms, like protista and plantae. And if the branching looks similar, then there has to be a genetic pattern of codons that is equal in both specimens' Genome. The difference of scale of both specimens could be difficult to track. Therefore using Artificial Intelligence, an Algorithm or Machine Learning to analyze the data could be strongly beneficial, but not required. Not to exclude individuals with a lot of time and effort and a strong desire.

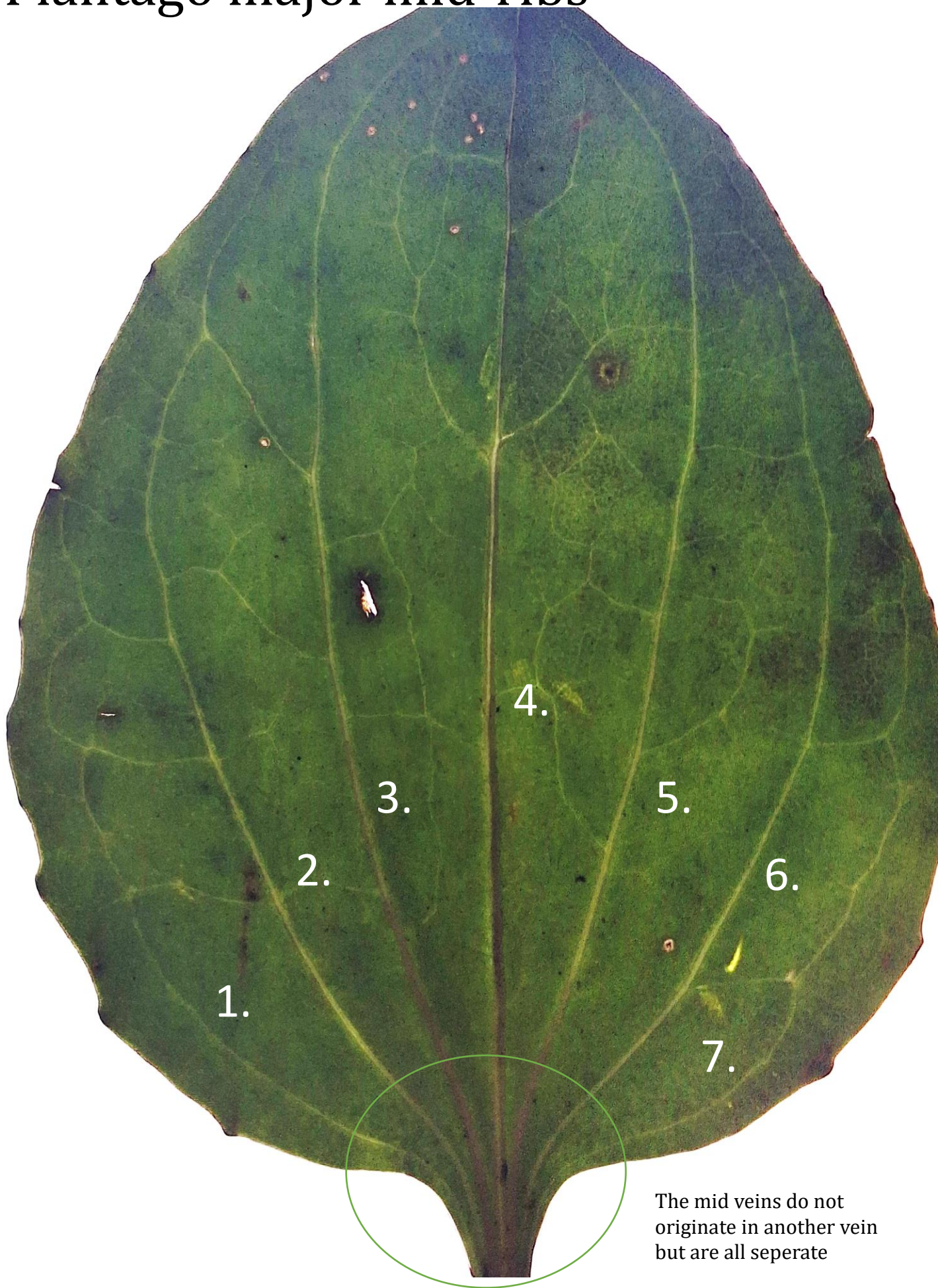
What makes it difficult the pattern in the genes?

The asymmetry of leaves, or branches from plants that branch off the stem makes this difficult. Although it is not impossible. This is shown in the following:

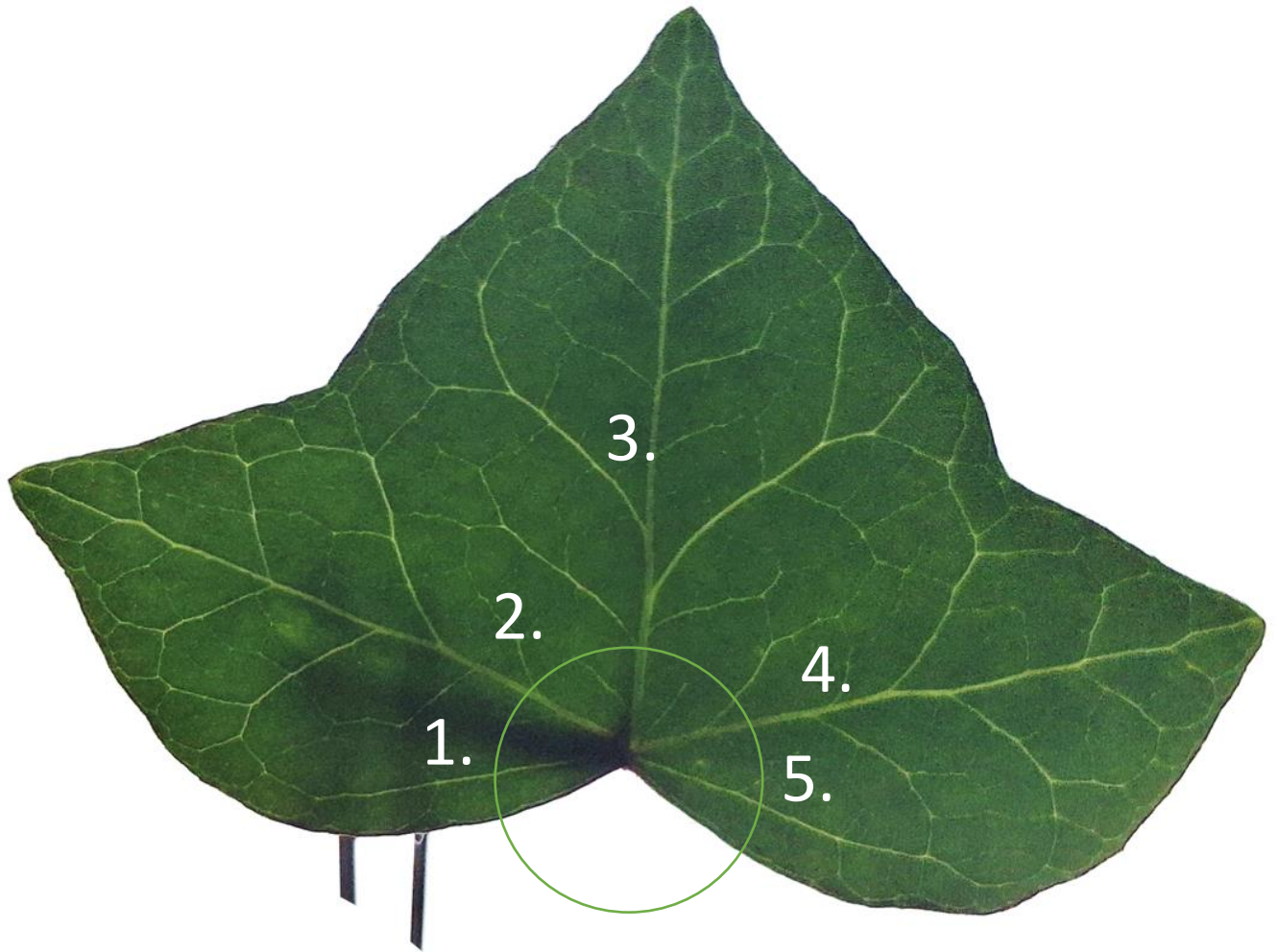
Conclusion

Midrib count is the only by genes predictable morphological feature or trait that can be deduced with certainty by codon-analysis or allele-analysis.

Plantago major mid-ribs



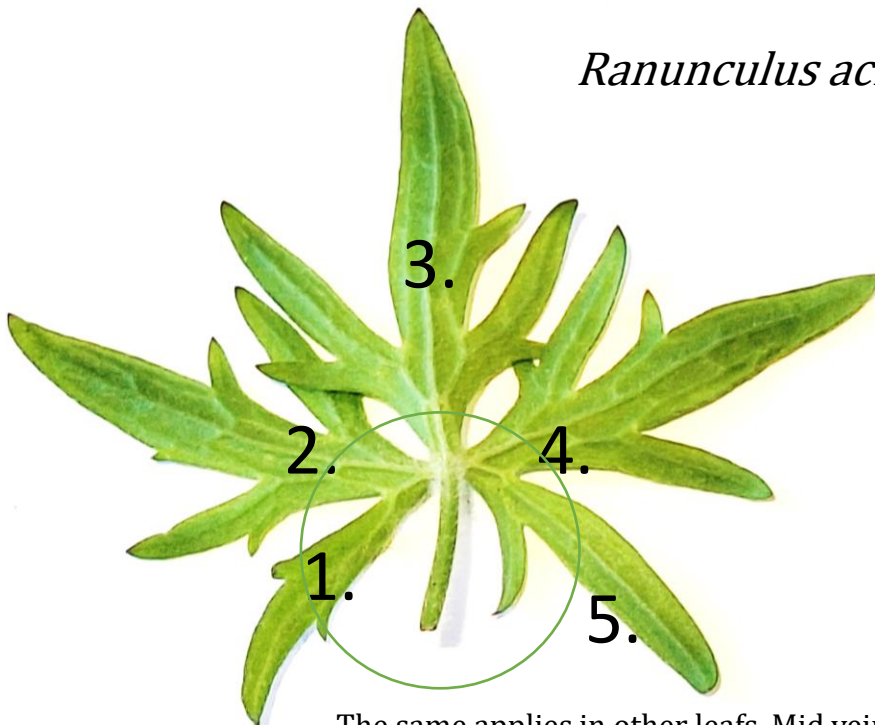
Hedera helix mid-ribs



The same applies in other leaves. Mid veins do not originate in another vein but are all separate.



Ranunculus acris leaf back



The same applies in other leaves. Mid veins do not originate in another vein but are all separate. This is the same as the o-Tree in the UCFR, Universal Concept of Finite Repetance which is astonishingly equal to Goethe's *Versuch die Metamorphose der Pflanzen zu verstehen*, which this work is derived from UCFR:

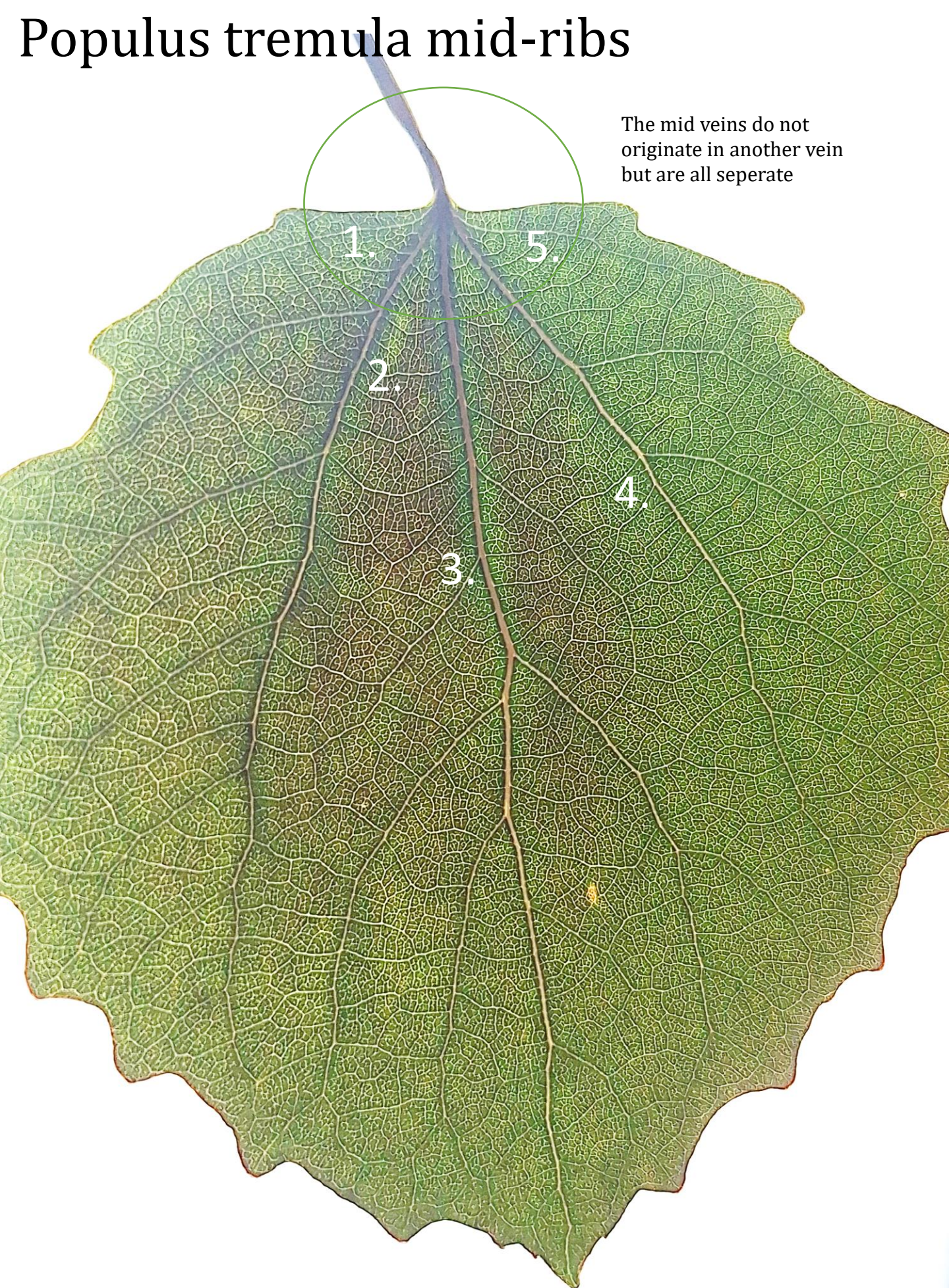
<https://zenodo.org/records/15453948>,
doi:10.5281/zenodo.15453948

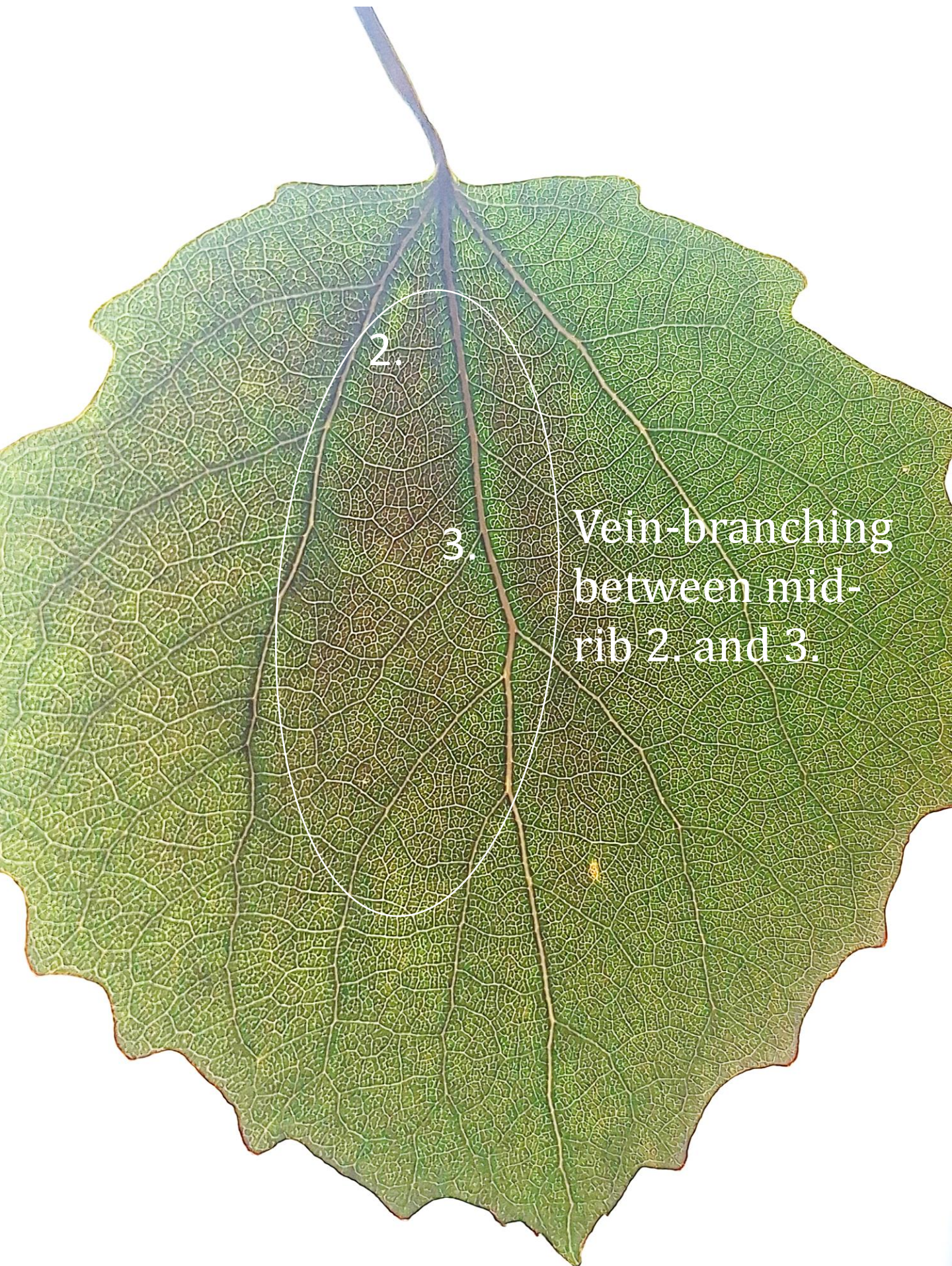
Goethe's Urpflanze (primordial plant) the same as the Universal Concept Of Finite Repetance and Euler Trees, all the same underlying self generative, self similar and enveloped structure:

<https://zenodo.org/records/15616229>
doi: 10.5281/zenodo.15616229

Populus tremula mid-ribs

The mid veins do not
originate in another vein
but are all seperate



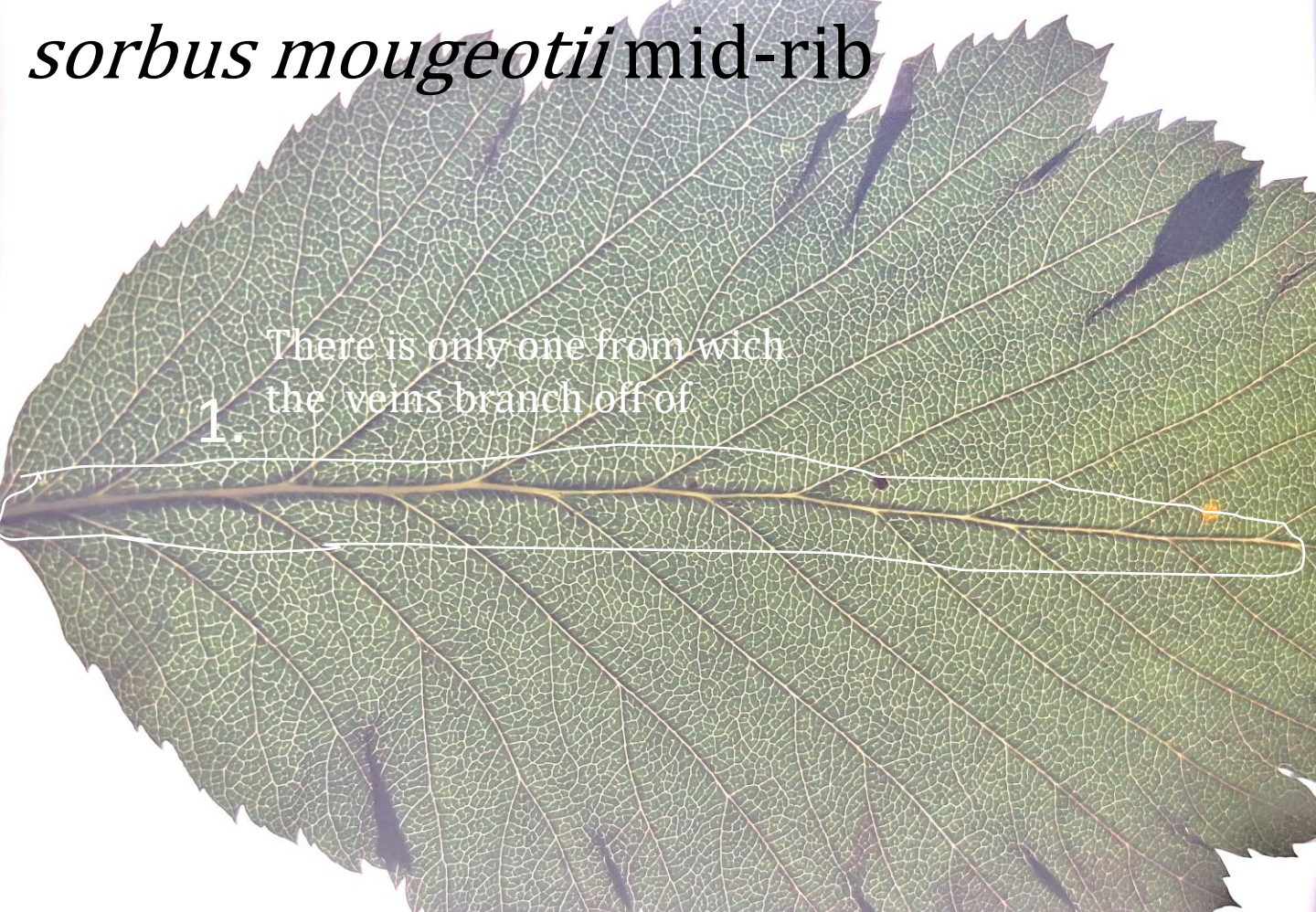


2.

3.

Vein-branching
between mid-
rib 2. and 3.

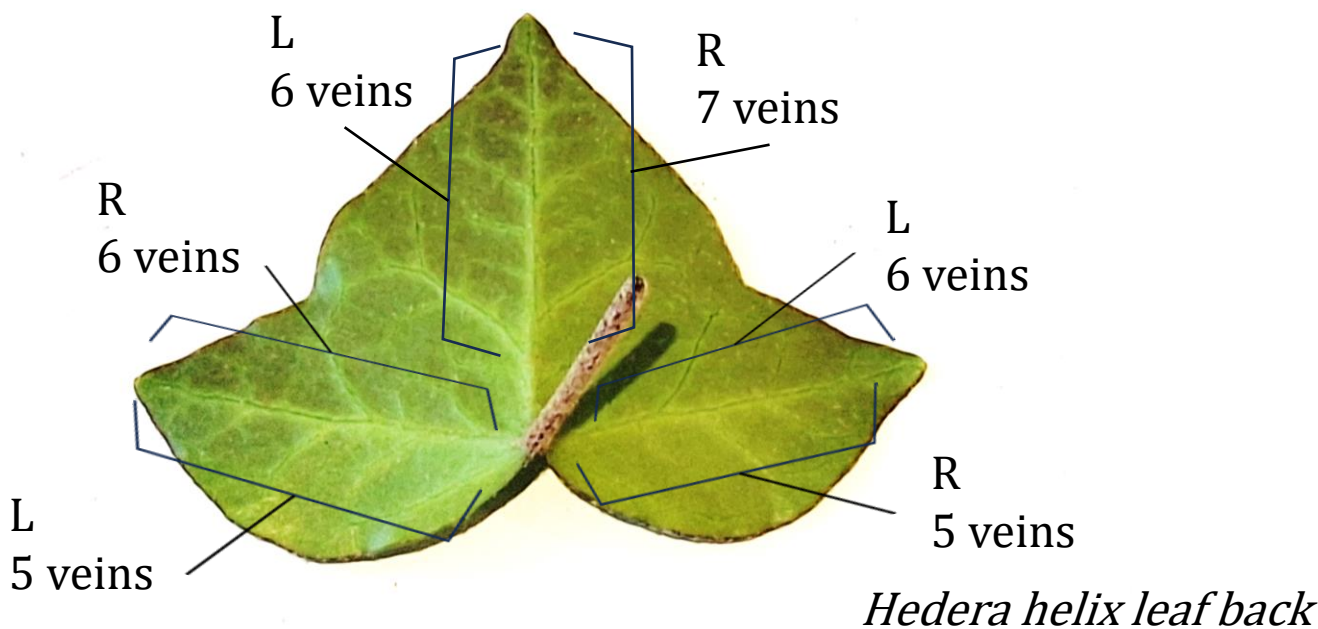
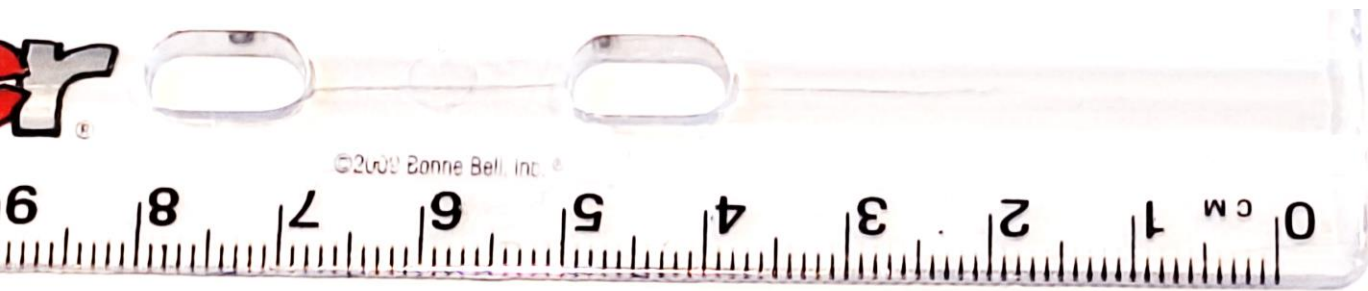
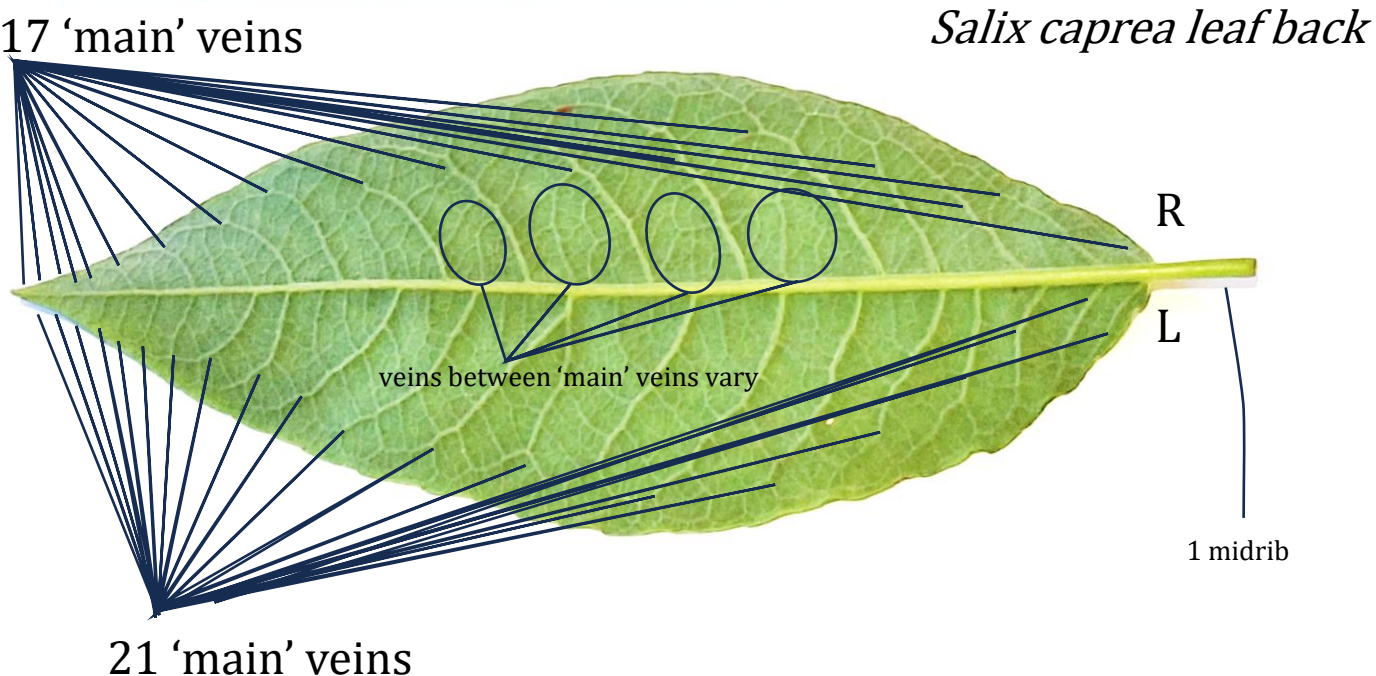
sorbus mougeotii mid-rib



Syringa reticula mid-rib



How it was counted?



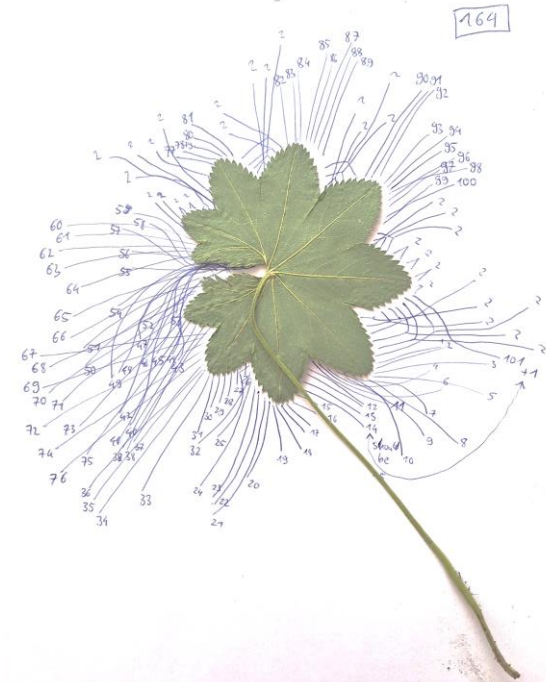
Counting *Alchemilla glomerulans*

leaf spikes

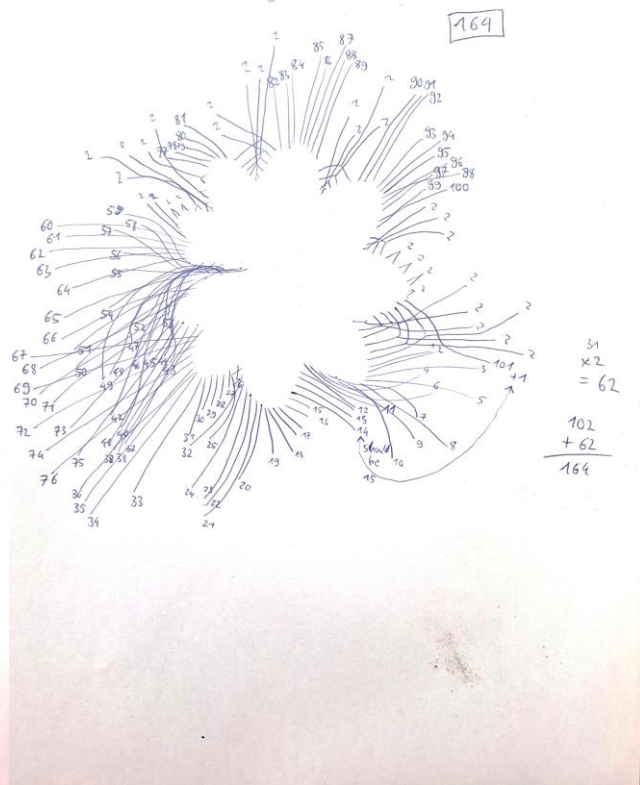
(if the boundary is asymmetrical the vein-branching has to be as well)

Alchemilla glomerulans (8 mid veins)

Alchemilla glomerulans (8 mid veins)



$$\begin{array}{r} 102 \\ \times 2 \\ \hline = 62 \\ 102 \\ + 62 \\ \hline 164 \end{array}$$

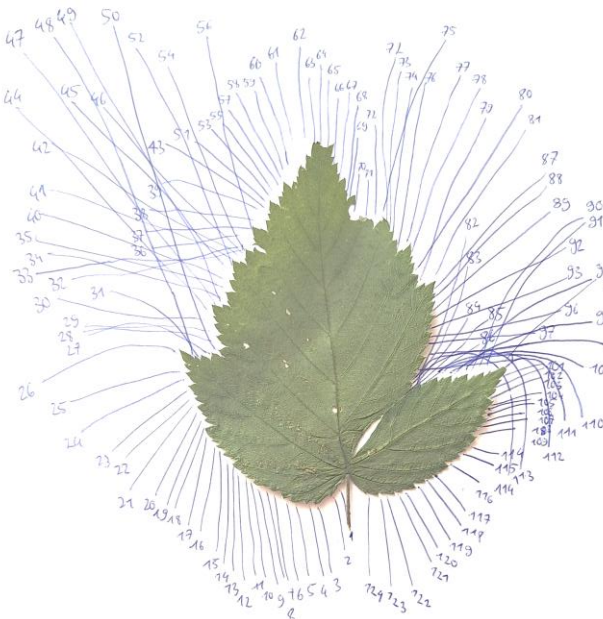


$$\begin{array}{r} 31 \\ \times 2 \\ \hline = 62 \\ 102 \\ + 62 \\ \hline 164 \end{array}$$

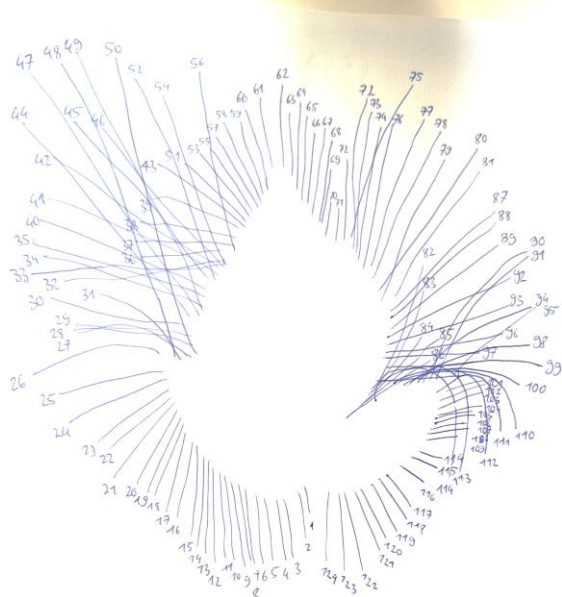
Counting *Rubus spectabilis* leaf

spikes

(if the boundary is asymmetrical the vein-branching has to be as well)



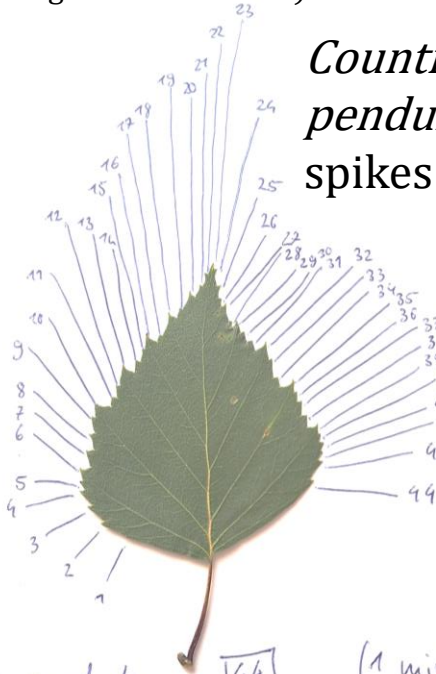
Rubus spectabilis 124



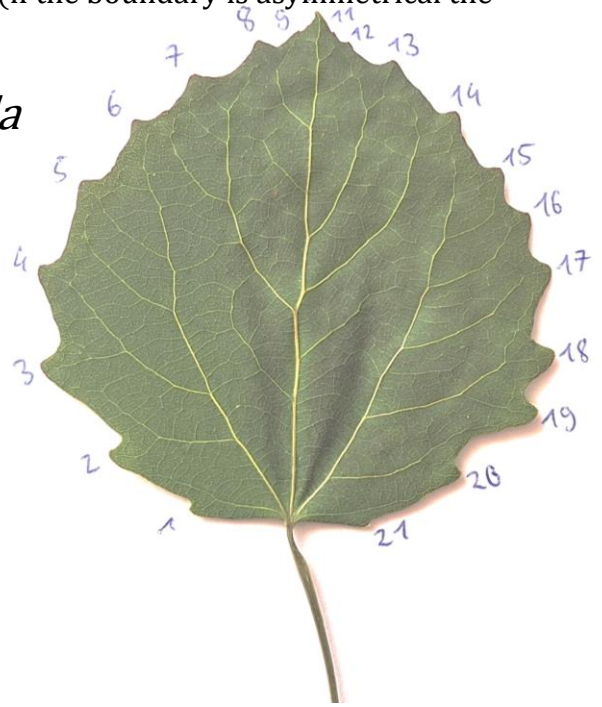
Rubus spectabilis 124 (7 mid veins in this very leaf)

Counting leaf spikes (if the boundary is asymmetrical the vein-branching has to be as well)

Counting betula pendula leaf spikes

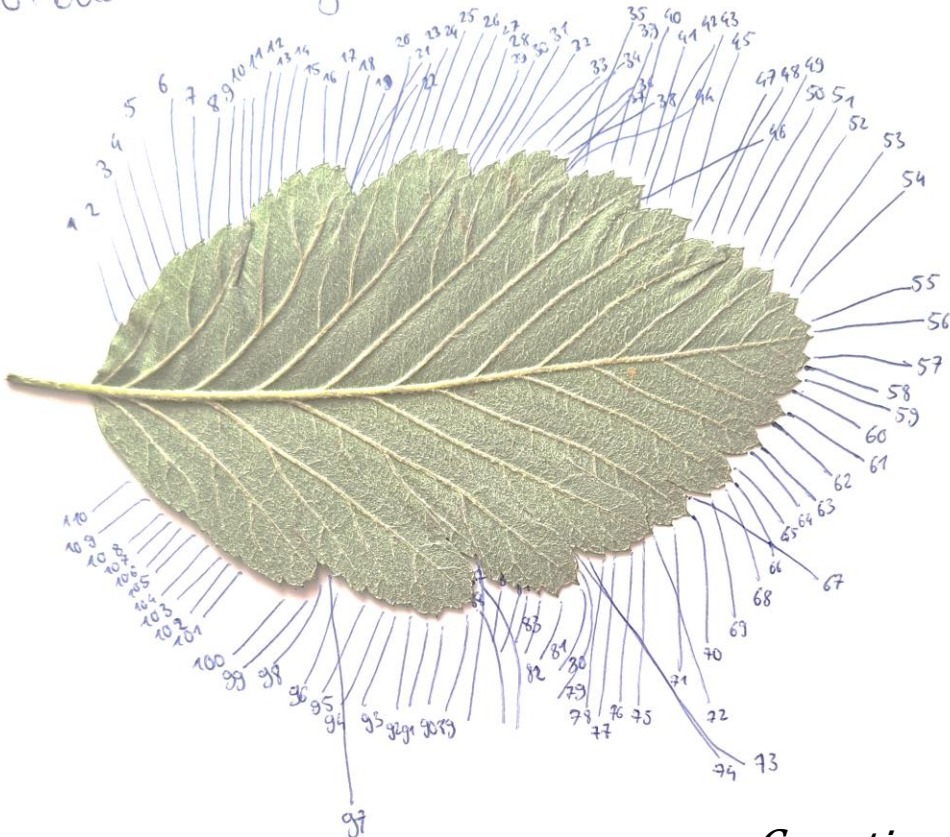


Betula pendula 44 (1 mid vein)



Counting populus tremula leaf spikes

Sorbus mougeotii 1 mid vein



Sorbus mougeotii 110

Counting sorbus mougeotii leaf spikes

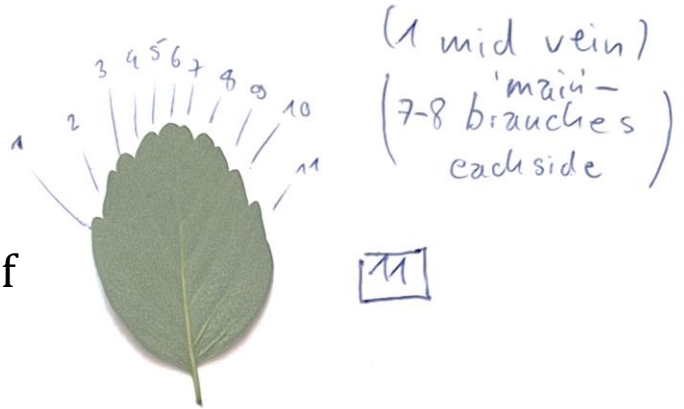
Counting leaf spikes

(if the boundary is asymmetrical the vein-branching has to be as well)

Fledera helix (5 mid veins)

Spirae chamaedryfolia

Counting *spirae*
chamaedryfolia leaf
spikes

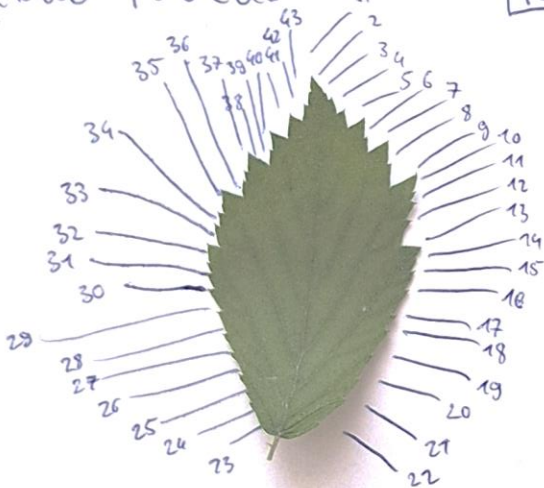


(1 mid vein)
(7-8 'main'-
branches
each side)

11

Rubus idaeus

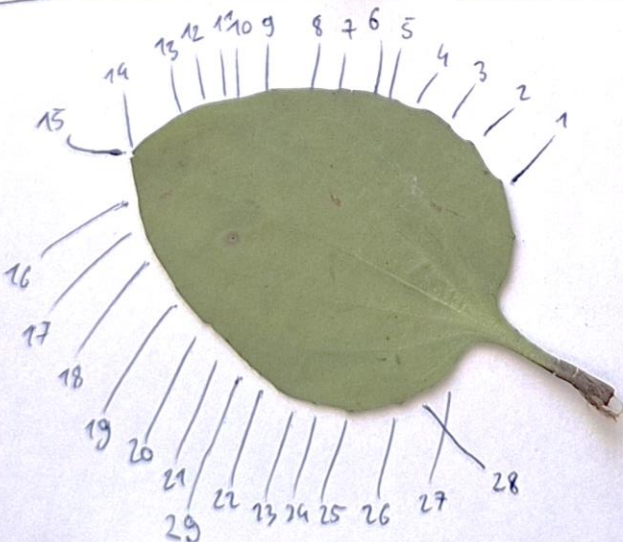
43



(1 mid vein)

7-8 'main'-branches
each side

Counting *rubus idaeus*
leaf spikes



Plantago major

29

(7 mid veins)

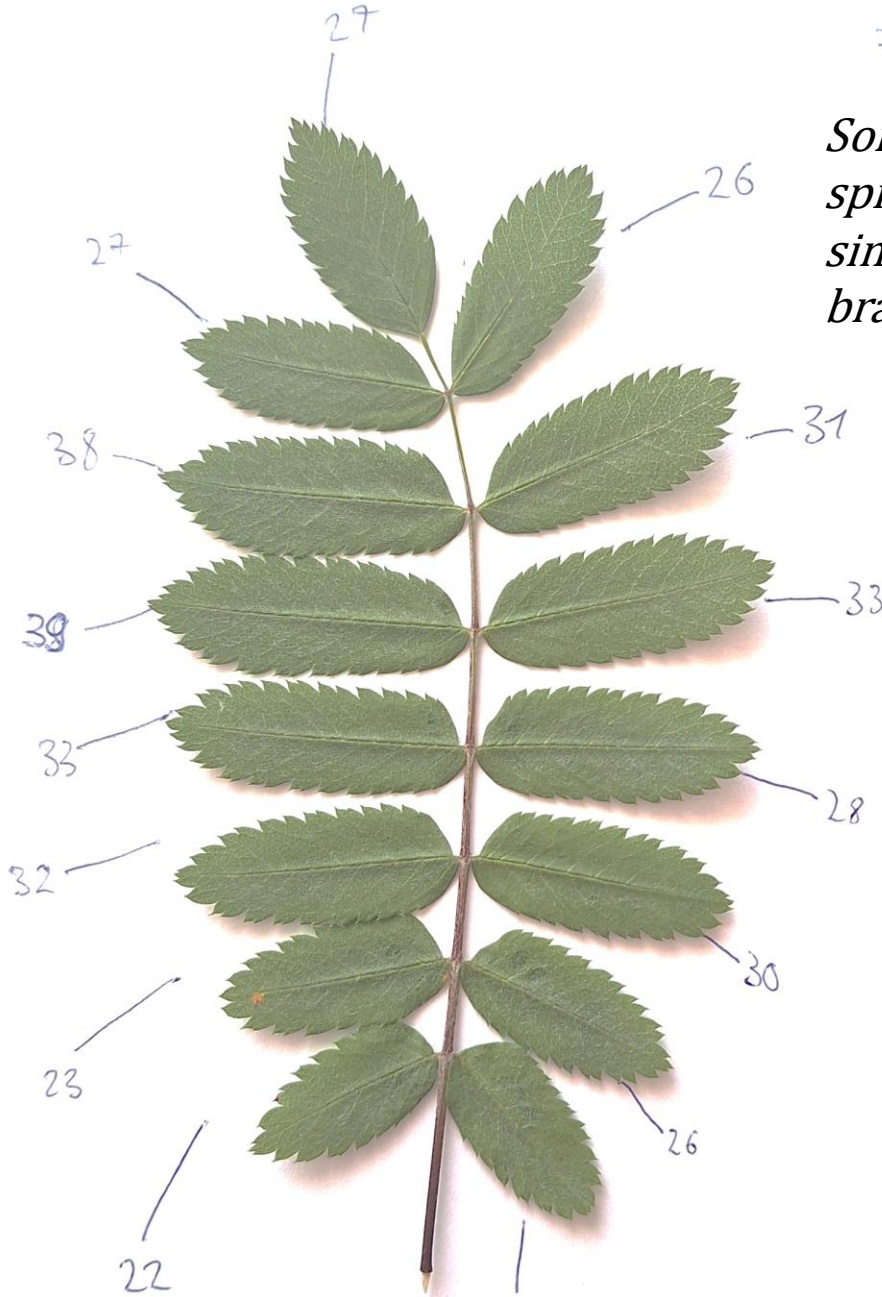
Counting *plantago*
major leaf spikes

Counting sorbus aucuparia leaf spikes

(if the boundary is asymmetrical the vein-branching has to be as well)

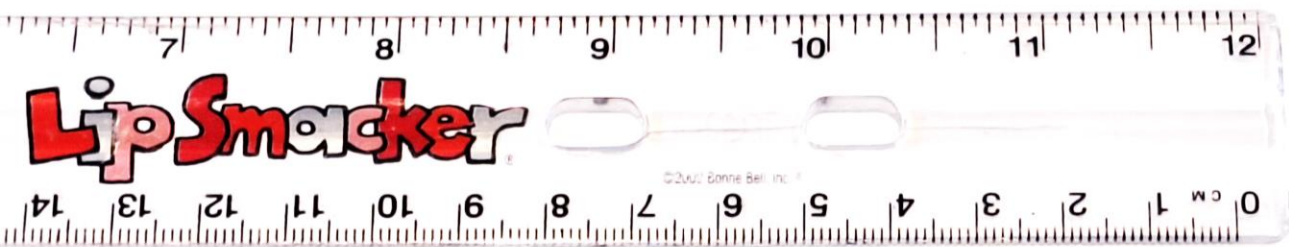
Sorbus aucuparia

$$\begin{aligned}
 &27 + 27 + 38 + 39 \\
 &+ 33 + 32 + 23 + 22 + 24 \\
 &+ 26 + 30 + 28 + 33 + 31 + 26 \\
 &= \boxed{439}
 \end{aligned}$$



Sorbus aucuparia leaf spikes for every single leaf on the brach.

After having counted leaf spikes and veins in many more leaves. I have come to the rational conclusion that the only feature, we predictably can search for in the genes, must be the midrib count of any leaf. Veins as leaf-spikes vary even within left and right side of the midrib in the same leaf! A leaf of *salix caprea* had 30 veins branching off the one mid-rib it has on the left side and 42 on the right side. This could be a counting issue, but I believe my counting ability to be good enough to not be off by such a huge margin. I counted along in others plants leaves and encountered it everywhere. In *rubus idaeus* there where 1 mid vein that split the leaf into left an right side as in *spirae chamaedryfolia* leaves as well. And both specimen had leaves where on the left side there were 7 veins and on the right 8 or vice versa. Not symmetric in vein-count.

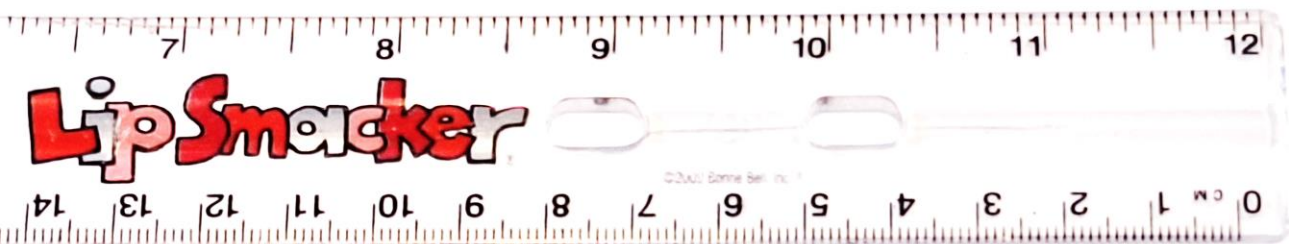


L
14 veins

R
12 veins

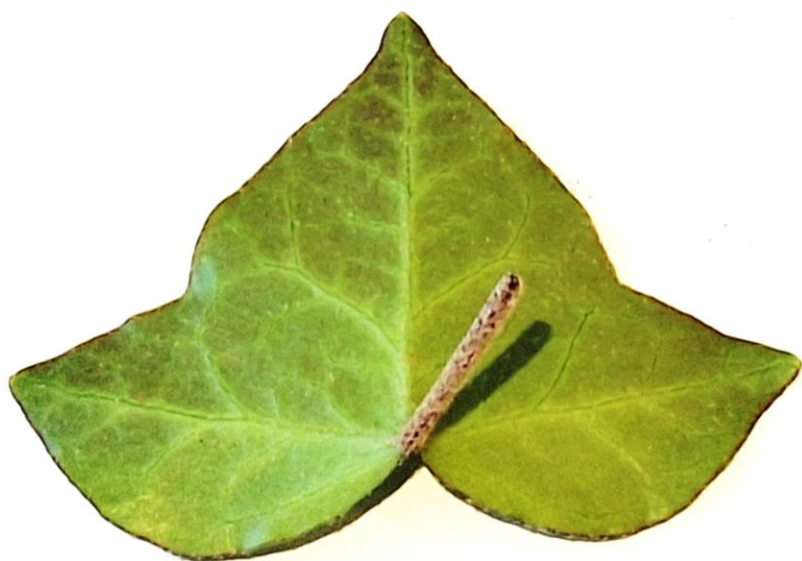
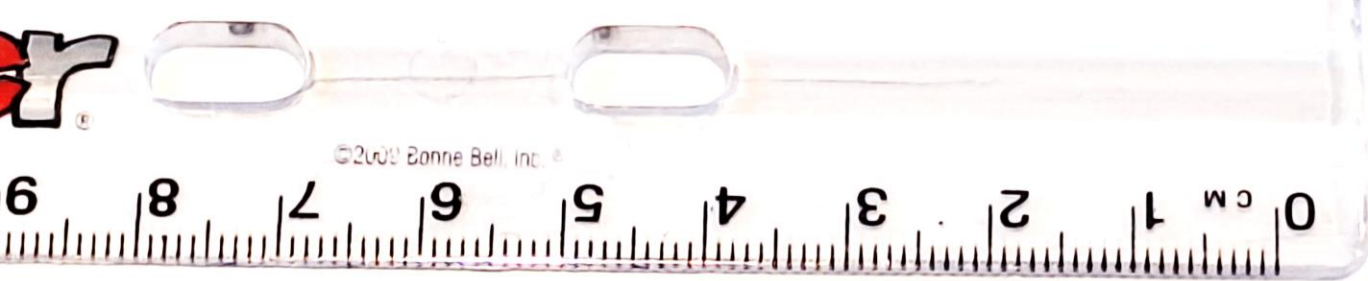


Sorbus mougeotii leaf
back

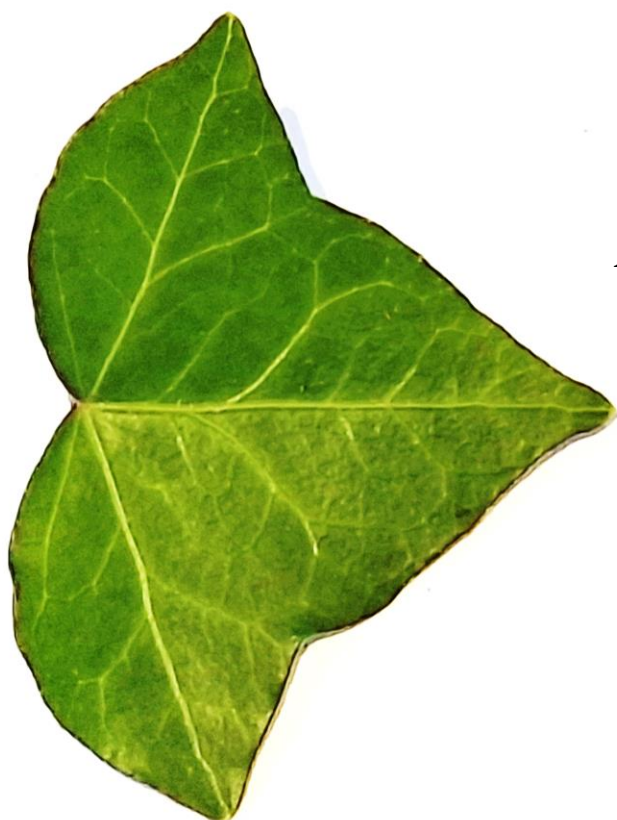


Sorbus mougeotii leaf
front

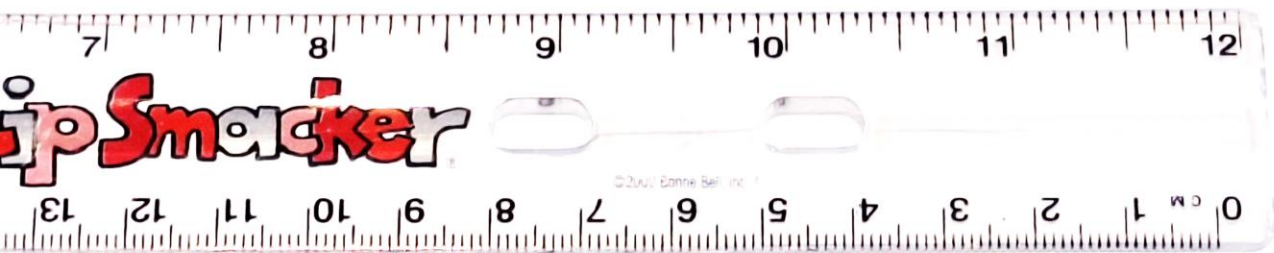




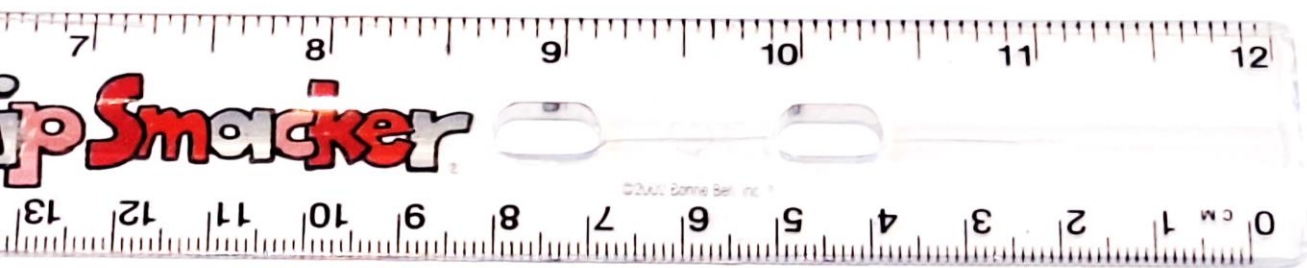
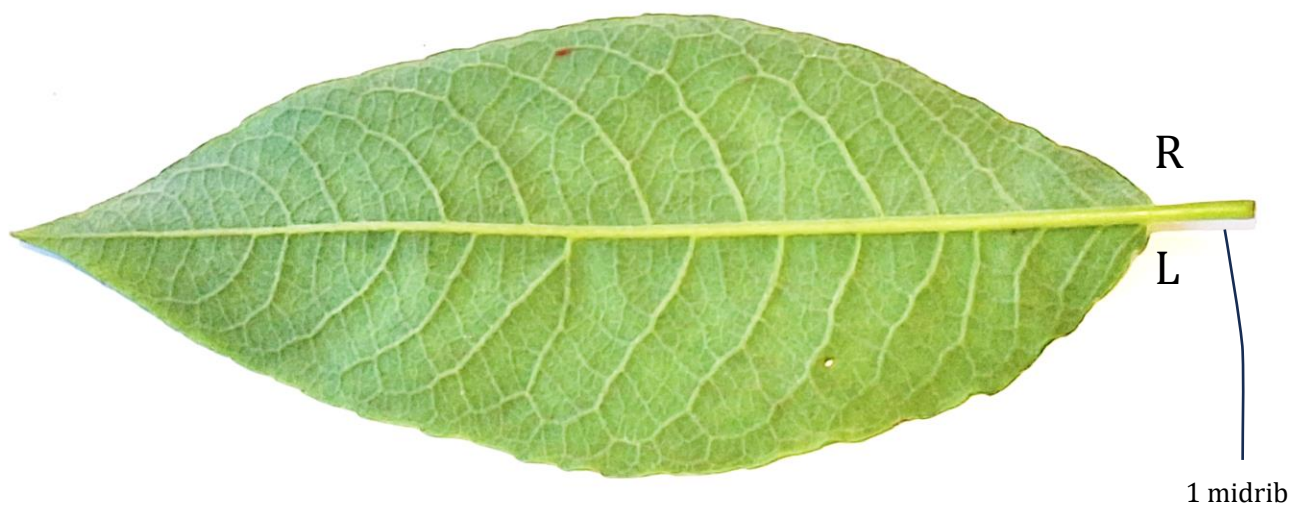
Hedera helix leaf back



Hedera helix leaf front



Salix caprea leaf back

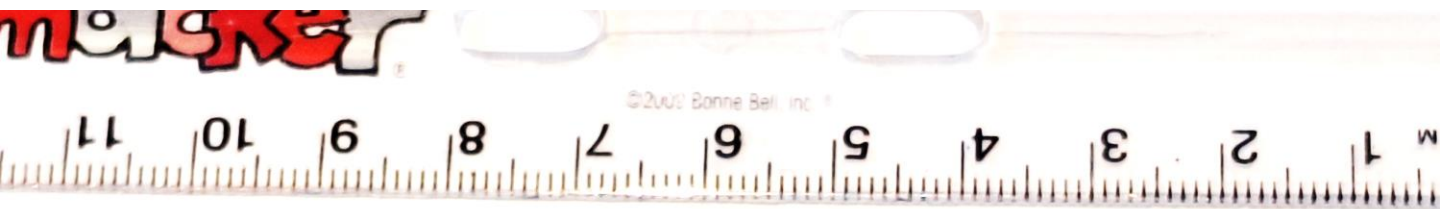
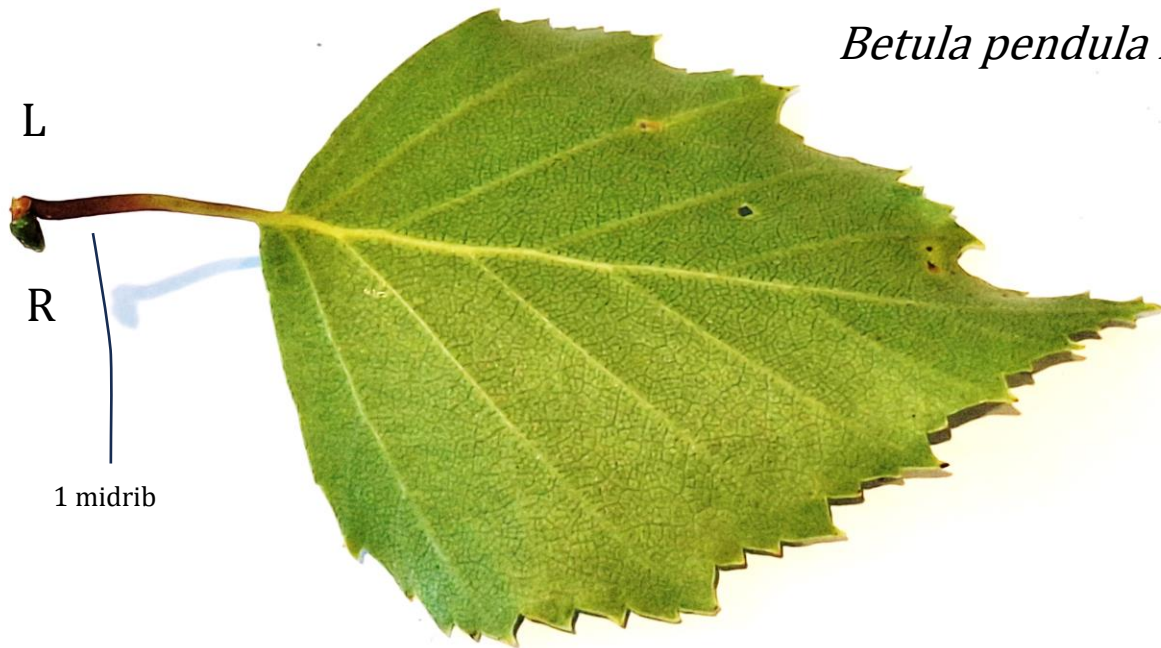


Salix caprea leaf front





Betula pendula leaf back

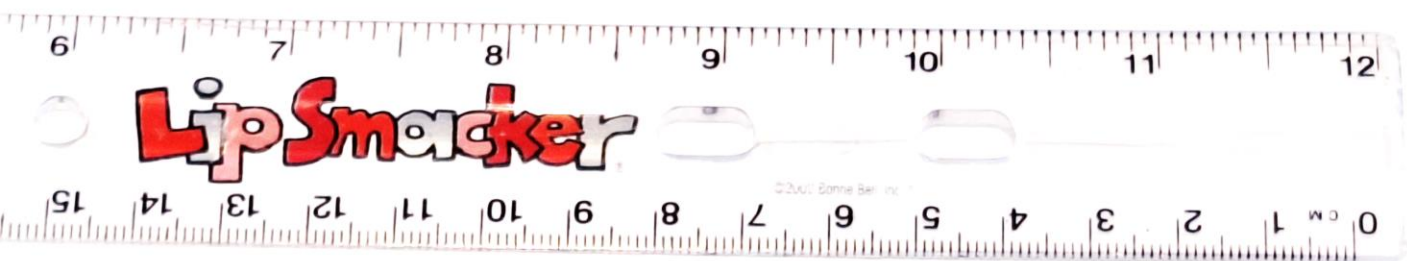


Betula pendula leaf front

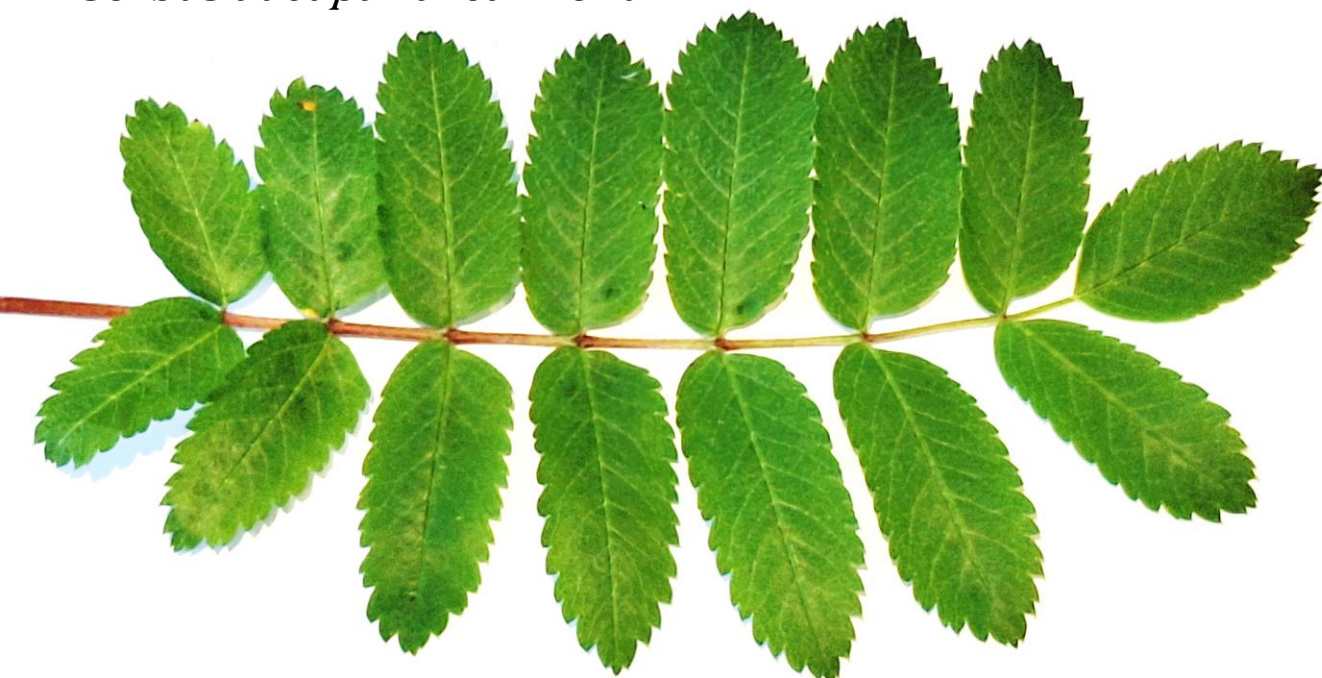


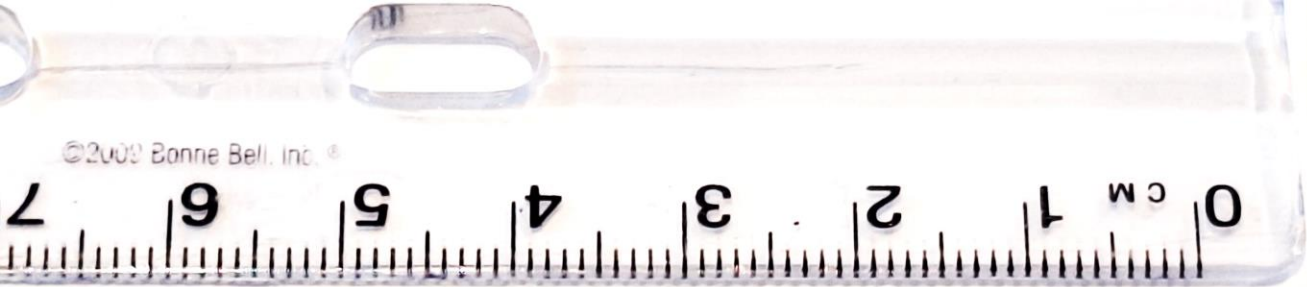


Sorbus aucuparia leaf back

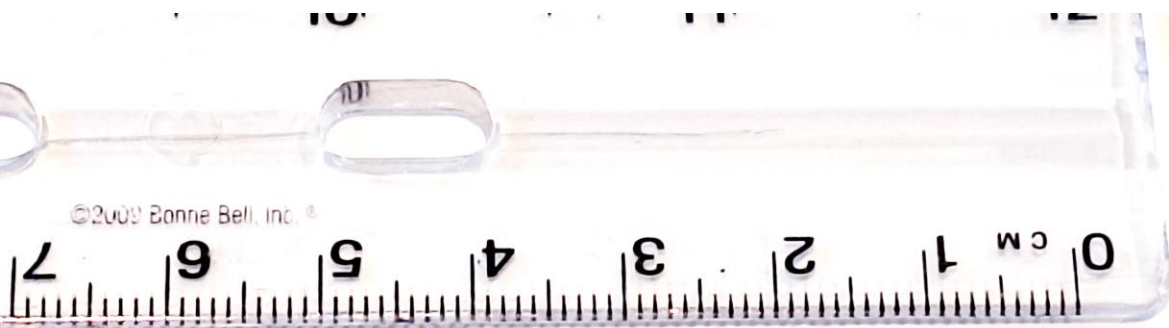


Sorbus aucuparia leaf front





Rubus idaeus leaf back

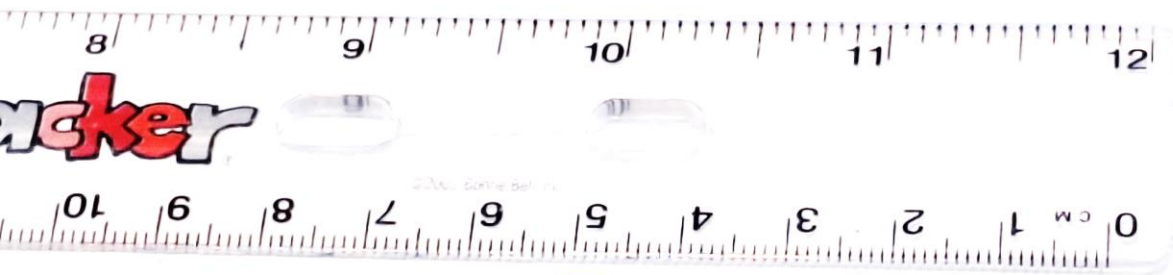


Rubus idaeus leaf front

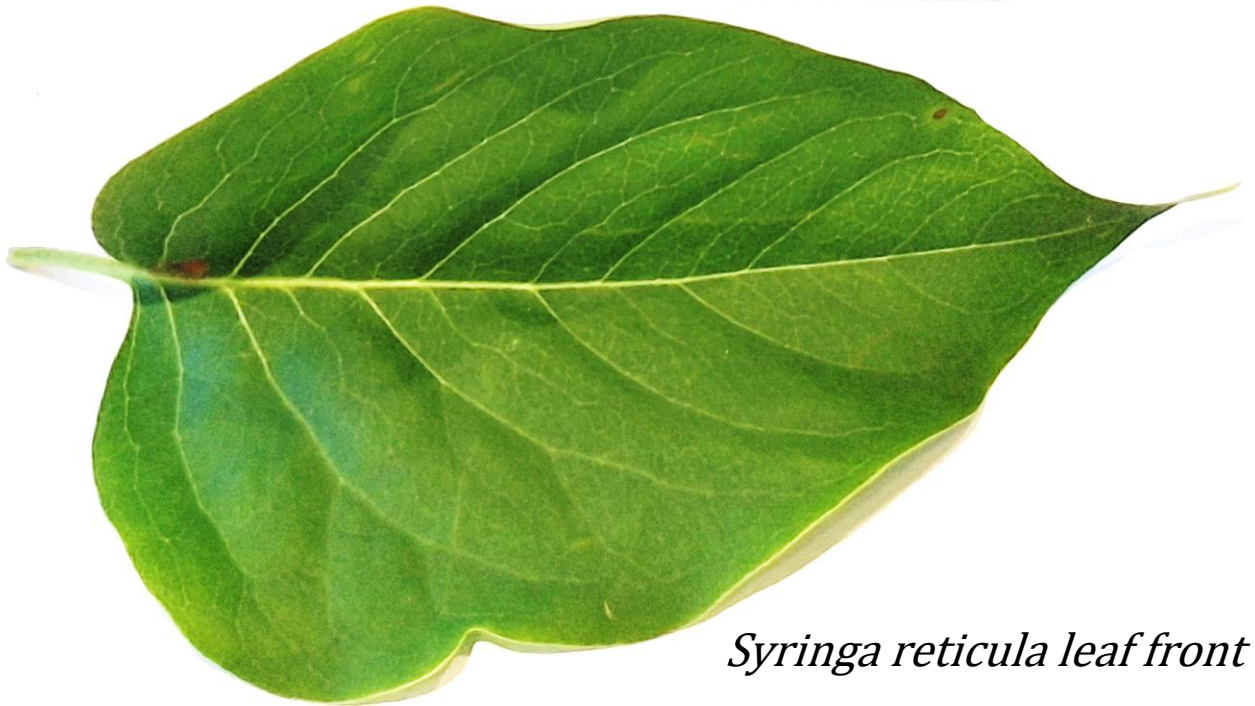


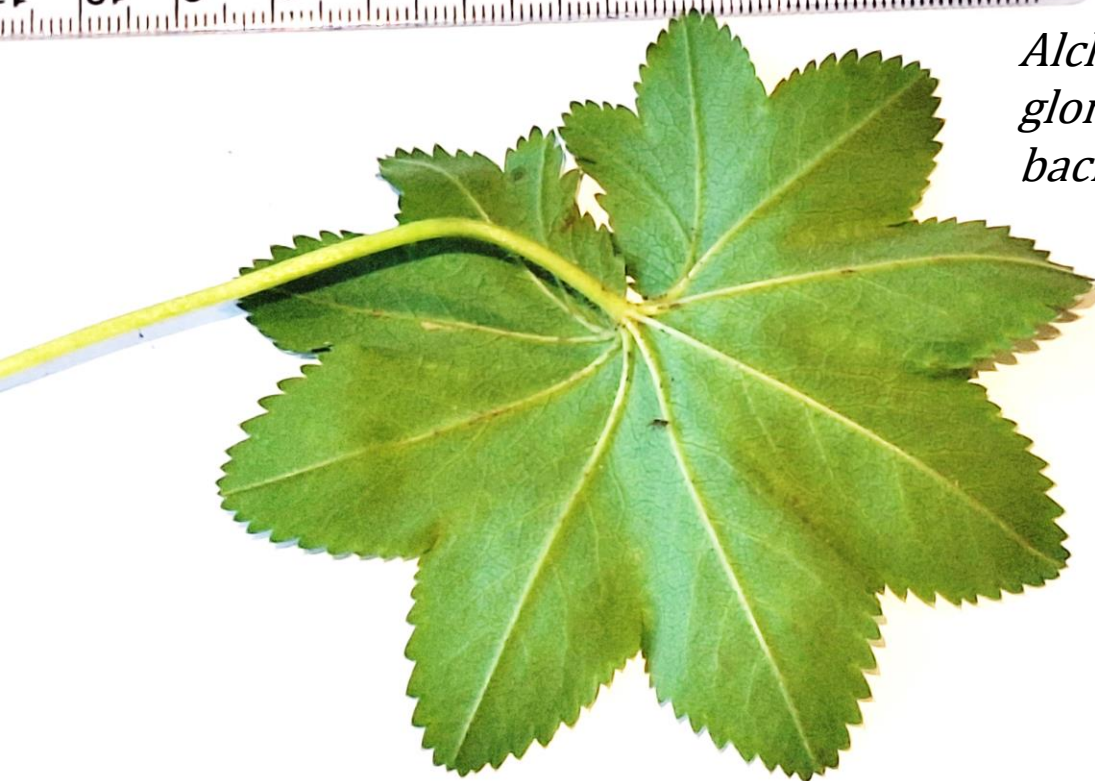


Syringa reticula leaf back

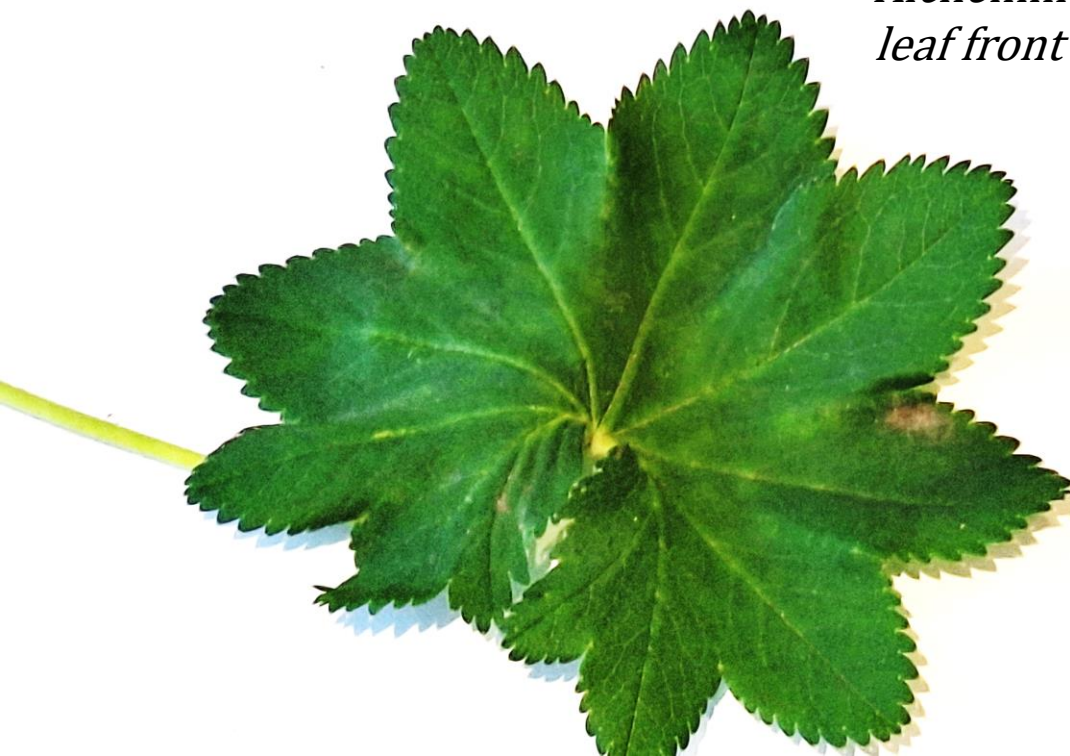
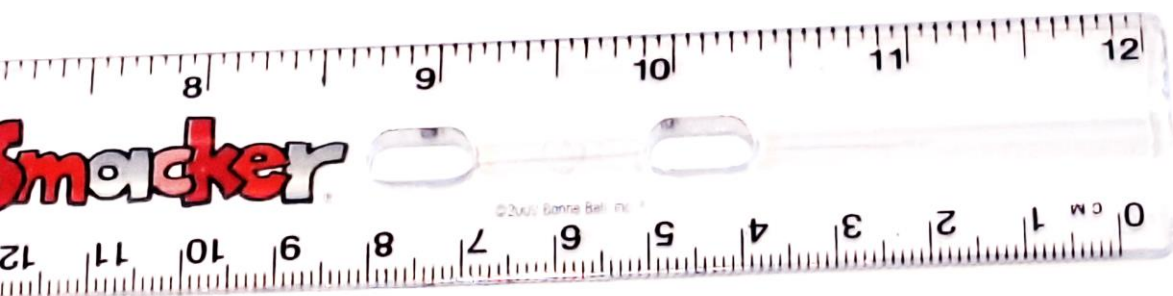


Syringa reticula leaf front

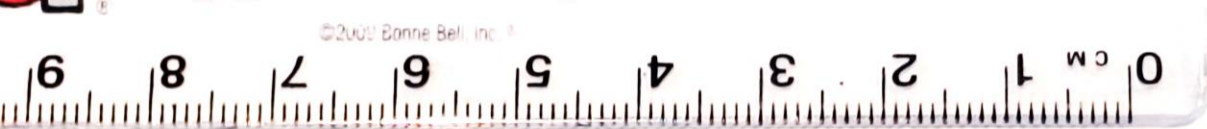




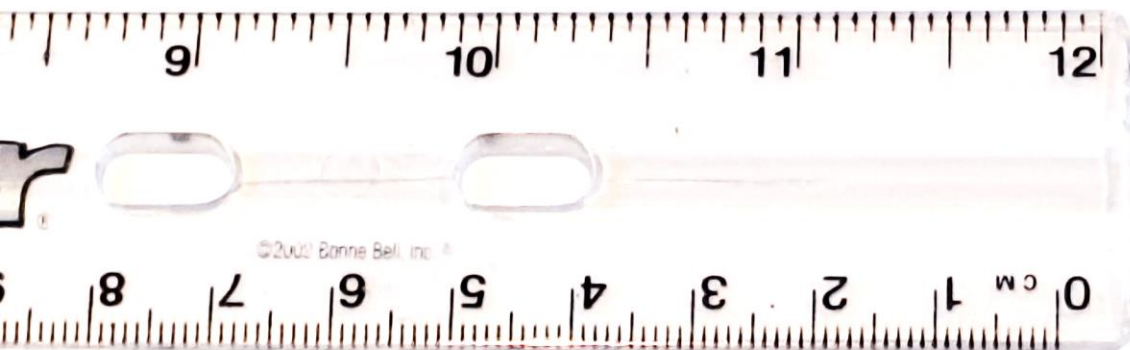
*Alchemilla
glomerulans* leaf
back



Alchemilla glomerulans
leaf front

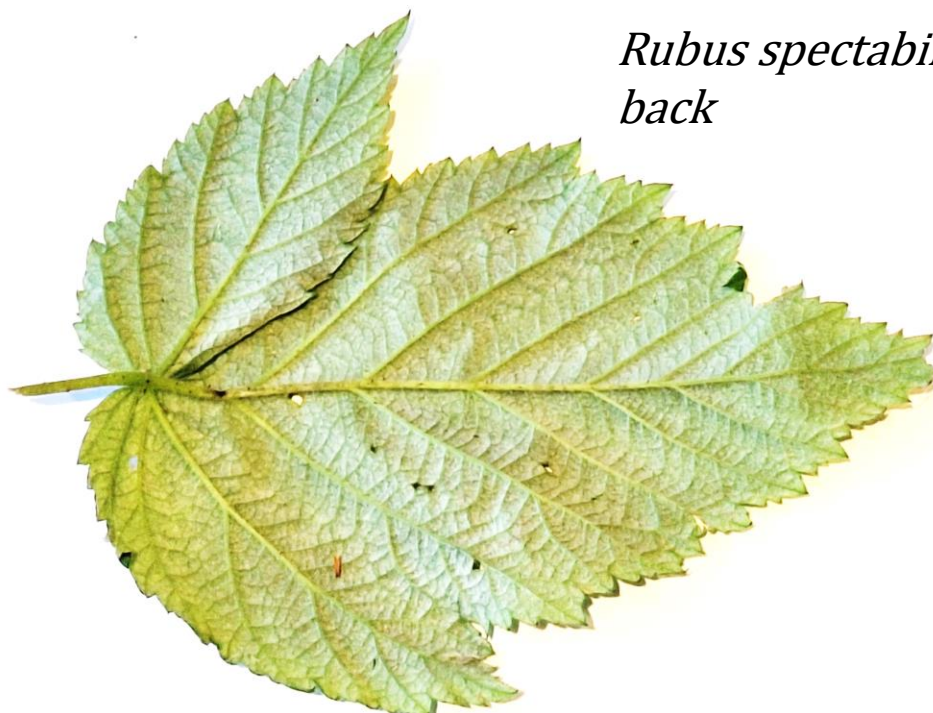
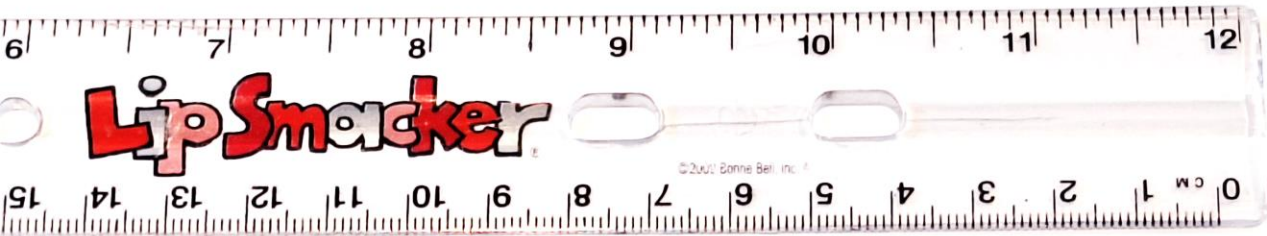


Ranunculus acris leaf back



Ranunculus acris leaf front





Rubus spectabilis leaf
back



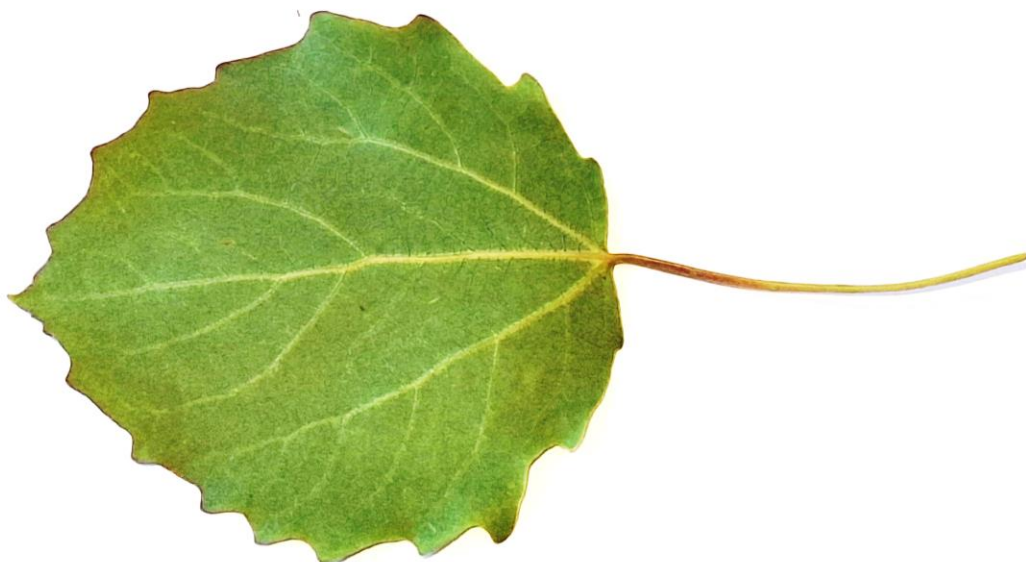
Rubus spectabilis leaf front



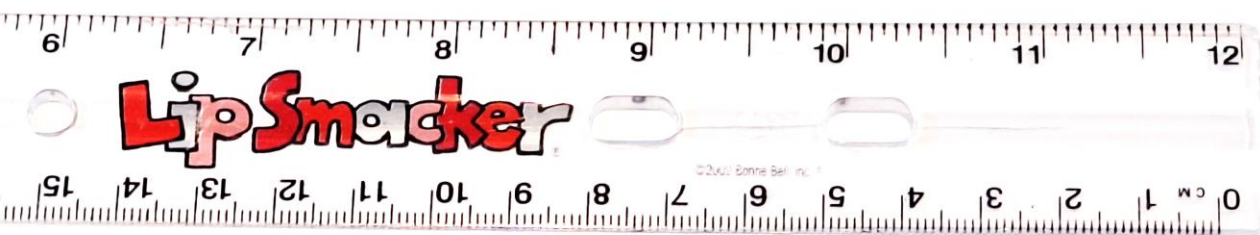
Rhododendron catawbiense Michx. (a bit unsure but sure about it being a rhodendron) leaf back



Rhododendron catawbiense Michx. (a bit unsure but sure about it being a rhodendron) leaf front



Populus tremula leaf back



Populus tremula leaf front

