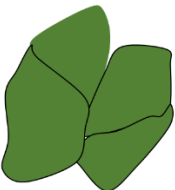
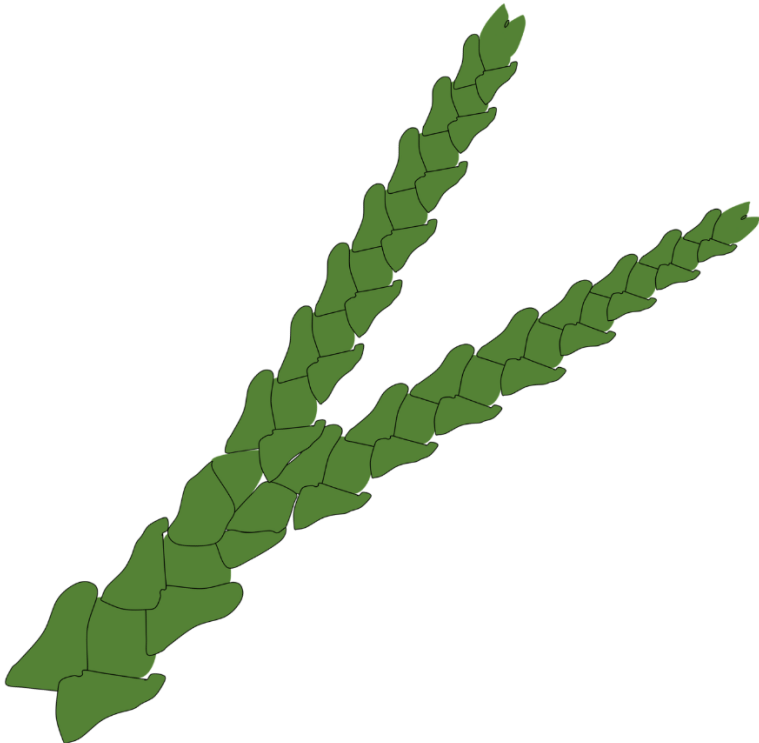
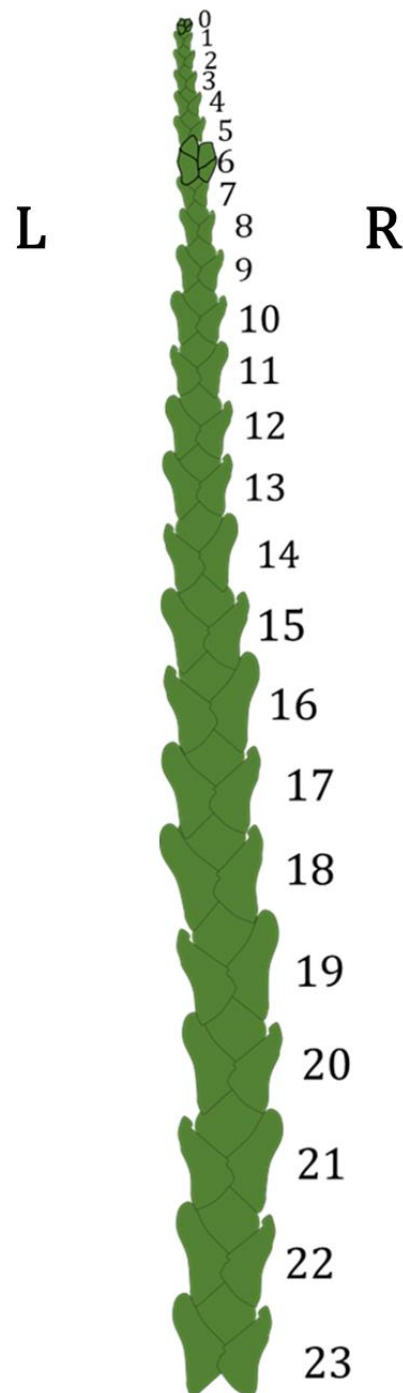


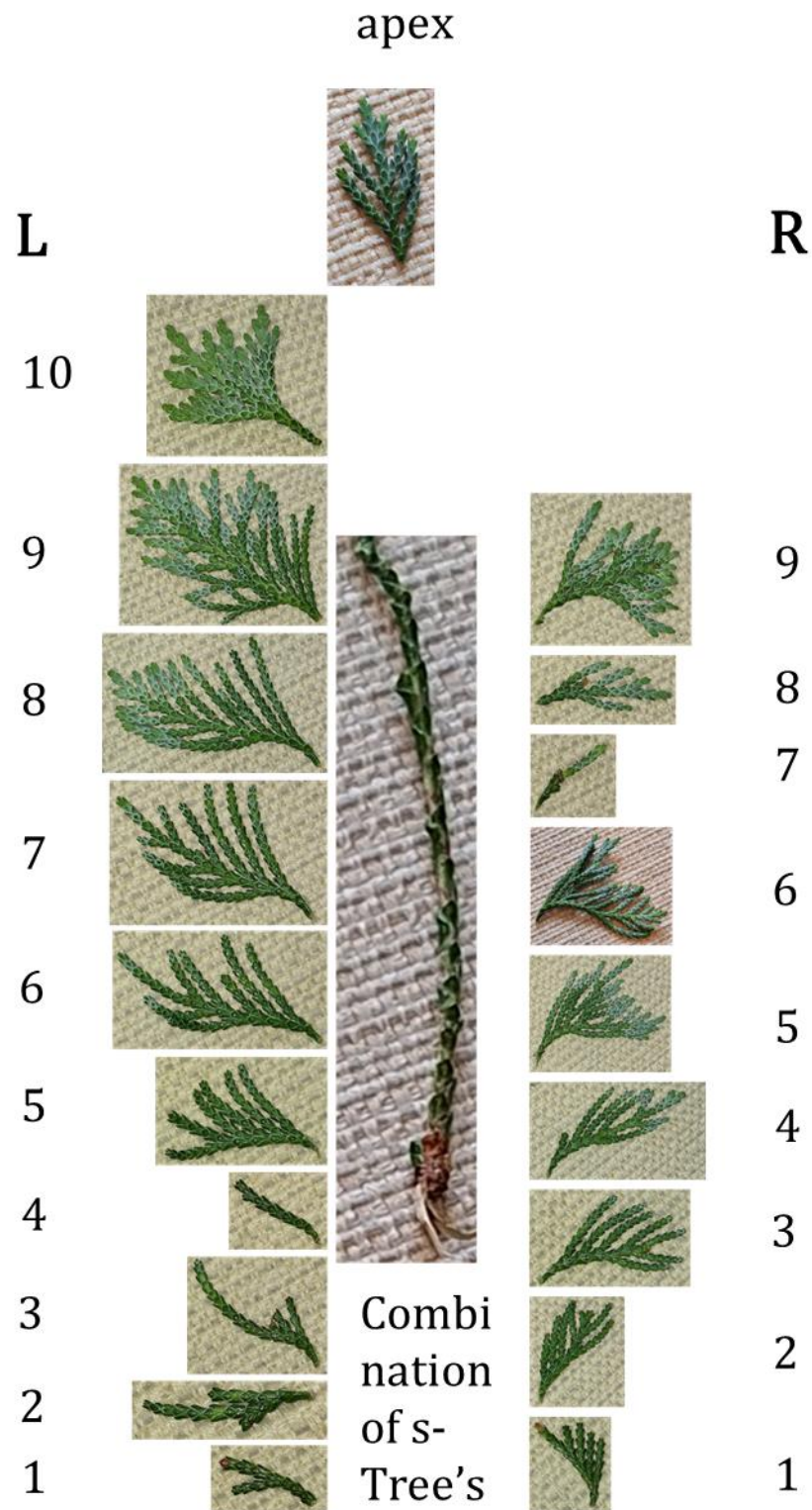
UCFR's usefulness in the field of botany Hypothesis that leafs are a further development of scale like twigs and and scale like twigs the further development of awl shaped like plants and awel shaped plants the further development of needles

o-Tree types of chamaecyparis lawsoniana			
1. o-Tree, binding branch	2. o-Tree, basic-element	3. o-Tree, small basic-element on the apex	
			
Example composite s-Tree and combinatorial sum			
			
$ \left\{ \begin{array}{l} o\text{-Tree}_{mb}[9\text{-size}] \star [(n\text{-branches}_\theta) +] \\ o\text{-Tree}_{mb}[8\text{-size}] \star [(n\text{-branches}_\theta) +] \\ o\text{-Tree}_{mb}[1\text{-size}] \star [(n\text{-branches}_\theta) +] \end{array} \right\} \text{Branch} $ $ \left\{ \begin{array}{l} o\text{-Tree}_{mb}[7\text{-size}] \star [(n\text{-branches}_\theta) +] \\ o\text{-Tree}_{mb}[6\text{-size}] \star [(n\text{-branches}_\theta) +] \\ o\text{-Tree}_{mb}[5\text{-size}] \star [(n\text{-branches}_\theta) +] \\ o\text{-Tree}_{mb}[4\text{-size}] \star [(n\text{-branches}_\theta) +] \\ o\text{-Tree}_{mb}[3\text{-size}] \star [(n\text{-branches}_\theta) +] \\ o\text{-Tree}_{mb}[2\text{-size}] \star [(n\text{-branches}_\theta) +] \\ o\text{-Tree}_{mb}[1\text{-size}] \star [(n\text{-branches}_\theta) +] \\ o\text{-Tree}_{mb}[1\text{-size}] \star [(n\text{-branches}_\theta) +] \end{array} \right\} \begin{array}{l} \text{Branch'} \\ \text{(to the left)} \end{array} \theta_1 $ $ \left\{ \begin{array}{l} o\text{-Tree}_{mb}[7\text{-size}] \star [(n\text{-branches}_\theta) +] \\ o\text{-Tree}_{mb}[6\text{-size}] \star [(n\text{-branches}_\theta) +] \\ o\text{-Tree}_{mb}[5\text{-size}] \star [(n\text{-branches}_\theta) +] \\ o\text{-Tree}_{mb}[4\text{-size}] \star [(n\text{-branches}_\theta) +] \\ o\text{-Tree}_{mb}[3\text{-size}] \star [(n\text{-branches}_\theta) +] \\ o\text{-Tree}_{mb}[2\text{-size}] \star [(n\text{-branches}_\theta) +] \\ o\text{-Tree}_{mb}[1\text{-size}] \star [(n\text{-branches}_\theta) +] \\ o\text{-Tree}_{mb}[1\text{-size}] \star [(n\text{-branches}_\theta) +] \end{array} \right\} \begin{array}{l} \text{Branch''} \\ \text{(to the right)} \end{array} \theta_2 $			

We see this again when we remove an entire branch of *chamaecyparis lawsoniana* we obtain 21 (2. o-Tree basic-elements) and in position 0 and 6 we have an infixiation of (1. o-Tree binding branch)



Whereas the lefthand side (L) has 10 branches, the righthand side (R) has 9 as discussed in the paper **Riedel, B. L. S. (2025). *Cross Domain Morphological Mapping, Hypothesis derived from the Universal Concept Of Finite Repetance (UCFR)***



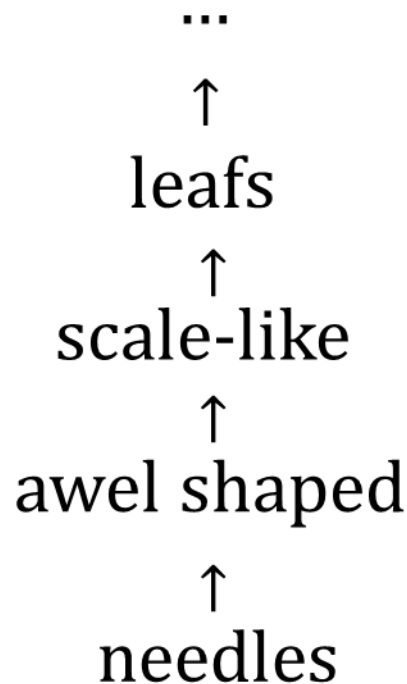
As one easily can observe, the needles of the observed plant overlap in various places. A leaf though has a closed surface.

It seems that many branches (L 1, 2, 3, 5, 6, 7, 8, 9, 10 and R 1, 2, 3, 4, 5, 6, 8, 9) that are again branching or not as in the case of (L 4 and R 7).

It would be very useful, in the sense that it would increase the area of sun exposure, for the branches of (L 1, 2, 3, 5, 6, 7, 8, 9, 10) on the left hand side and the branches (R 1, 2, 3, 4, 5, 6, 8, 9) on the right hand side, not to overlap. But instead having a defined amount of midribs (1, 3, 5, 7, 9, 11... as odd amounts are favourable as discussed in **Riedel, B. L. S. (2025). *Cross Domain Morphological Mapping, Hypothesis derived from the Universal Concept Of Finite Repetance (UCFR)***, and then in between those midribs have a seemingly random branching that closes the surface of the leaf in a fashion that obtains most sun irradiation for the pupose of photo synthesis →thereby increasing photosynthesis rate.



When we have a finite amount of Biological elements (plant cells of various types) one does not obtain symmetrical leafs, but asymmetrical ones. Complexer ones. Now to our H_0 it seems as if leafs are a further development of scale like twigs and scale like twigs the further development of awl shaped like plants and awl shaped plants the further development of needles.



Now one has to check the biological evidence.

Plants with leafs (microphylls and macrophylls developed likely in the devonian period 419 - 359 million years ago.

Source: Boyce, C.K. and Knoll, A.H. (2002). Evolution of developmental potential and the multiple independent origins of leaves in Paleozoic vascular plants. *Paleobiology*, 28(1), 70 - 100.

(Identifies multiple independent leaf origins in the mid to late Devonian, based on fossil data and physiological modeling.)

Gensel, P.G. and Edwards, D. (2001). *Plants Invade the Land: Evolutionary and Environmental Perspectives*. Columbia University Press.

(Discusses the emergence of leafy vascular plants during the Devonian, based on key fossil discoveries.)

Scale like plants in the late devonian period 385 million years ago

Source: Boyce, C.K. (2005). *Patterns of segregation and convergence in the evolution of leaves*. *New Phytologist*, 167(3), 641 - 652.

Gensel, P.G., and Edwards, D. (2001). *Plants Invade the Land: Evolutionary and Environmental Perspectives*

Awel shaped plants developed likely around the late carboniferous to early permian 300 million years ago

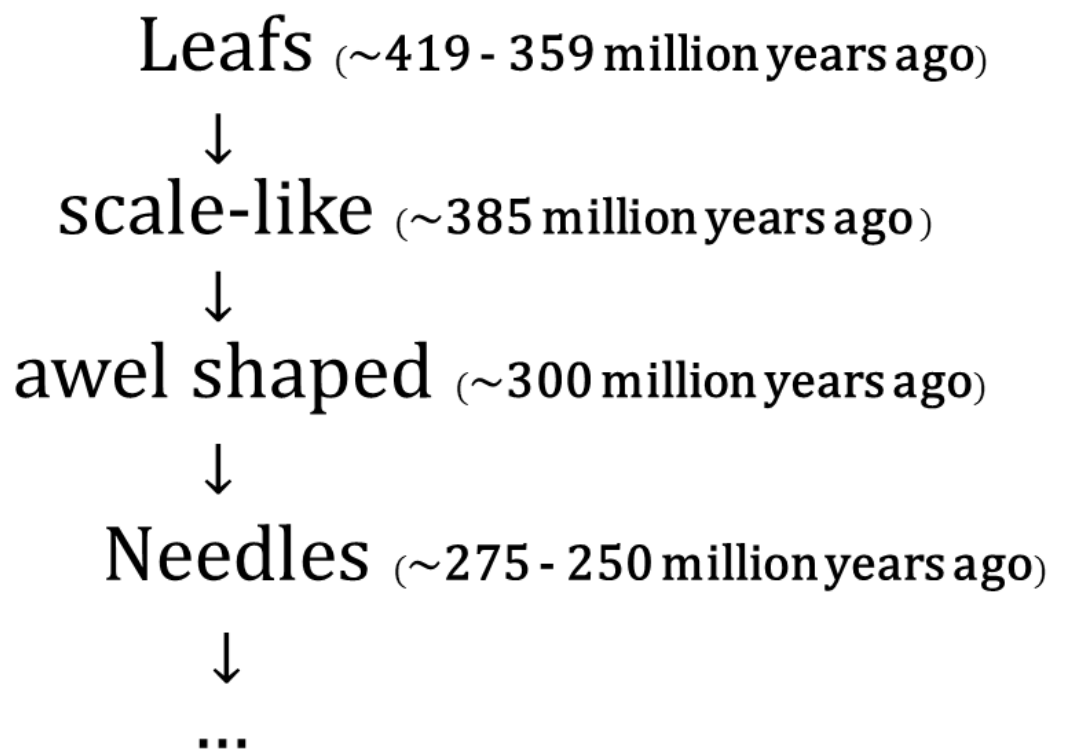
Source: Rothwell, G.W., and Mapes, G. (2001). *A reevaluation of Voltzialean conifers and their evolution. Review of Palaeobotany and Palynology*, 116 (1 - 2), 69 - 98

Needle plants developed likely in the permian period 275 - 250 million years ago

Source: Miller, C.N. (1999). Evolution of the Conifers. *Botanical Review*, 65(2), 132 - 153.

Stewart, W.N., and Rothwell, G.W. (1993). *Paleobotany and the Evolution of Plants* (2. ed.).

Now that debunks the papers Null.Hypothesis. It is quite the opposite!



Now how can that be explained with the UCFR? Easy one might think. The o-Trees that are finitely repeated got more advanced over time. Butt his does not hold.

So the only thing that is true is the more time passed, the more straight the elements looked. This can be said in many ways and I hope the reader understands the point I try to make. The more time passed, the more the plants developed into something that looked similar to simple representations of mathematical Trees. Like an ideal Why is that?

Its not easy to say. The plants that do not resemble it equally well still exist, and they are prfectly fine.

I think this paper represents how wrong one can be in assuming relations out from shapes. But also the necessity that mathematicians begin to look at nature, that they begin to justify their claims. There are no infinite fractals in a plant, in a twig, there is no continuous background that we can follow into the infinitesimal. But there are forests full of plants, molds, fungi that we can look at. We simply can do finite dynamical and combinatorial biomathematics. And we now have the UCFR framework to register nature finite mathematically. So easy that every layman/laywoman/layperson, with a little introduction, can write down a perfect description of whatever they want to document.

And the best of it is that the description is layered, such that an unsatisfied expert can paste in lower layers of abstraction until the expert reaches the smallest-planck scale levels of abstractions and hits the epistemological limits of what can be abstracted and still is not satisfied but his/her hands are bound because there is nothing that can be done with such a limit but to either wonder the rest of one's life about or to accept it. For the complex, combinatorial, asymmetrical growth we need a finite dynamical calculus, and we have that now. But it is one without absolute proofs other than what cannot be modeled cannot be fully understood, and every proof that can be modeled is sufficient.

That's not as ideal as newtonian calculus with ZFC+ but it is at least real, in the sense that you will encounter it in your life, in nature, in language, in signals, in heartbeats and motors.

I invite the reader to use the UCFR for that purpose.

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