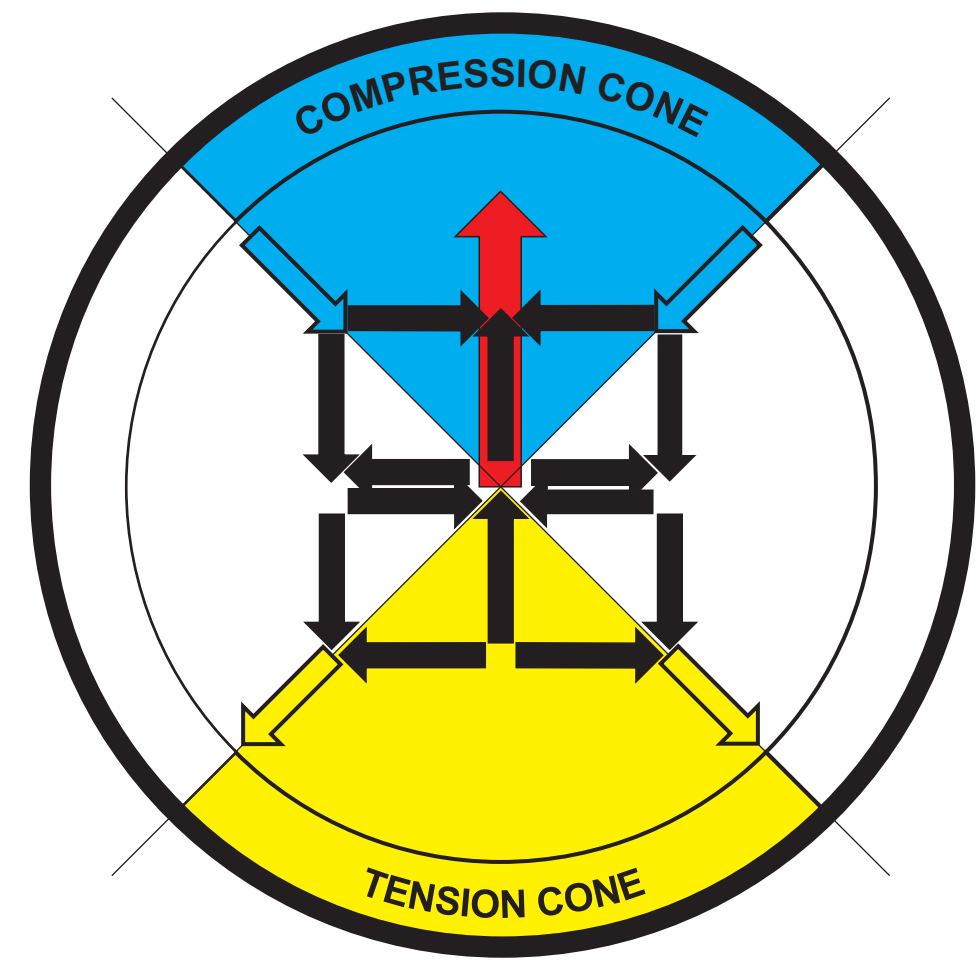


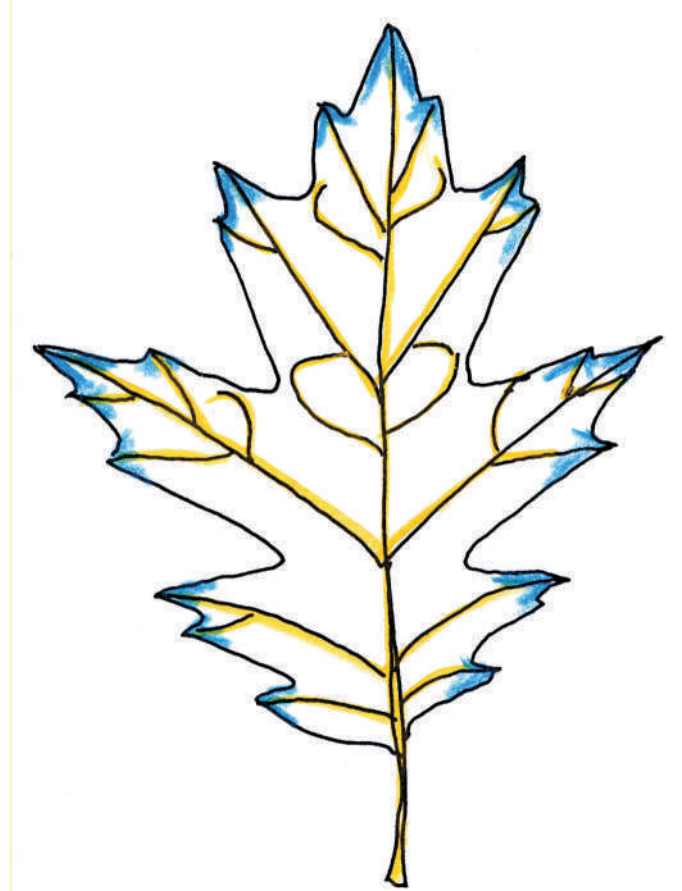
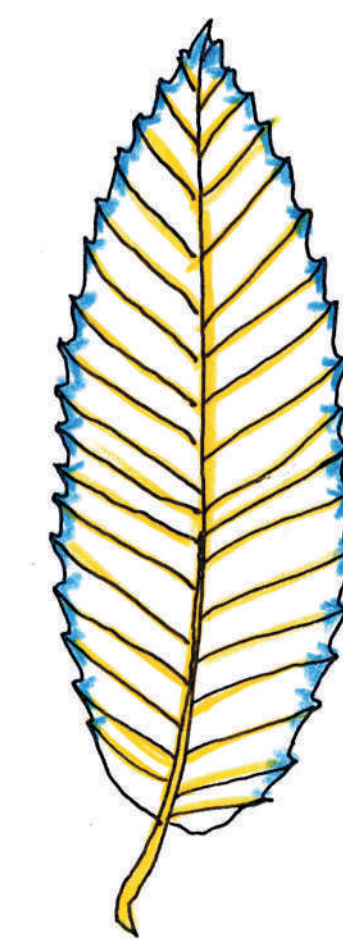
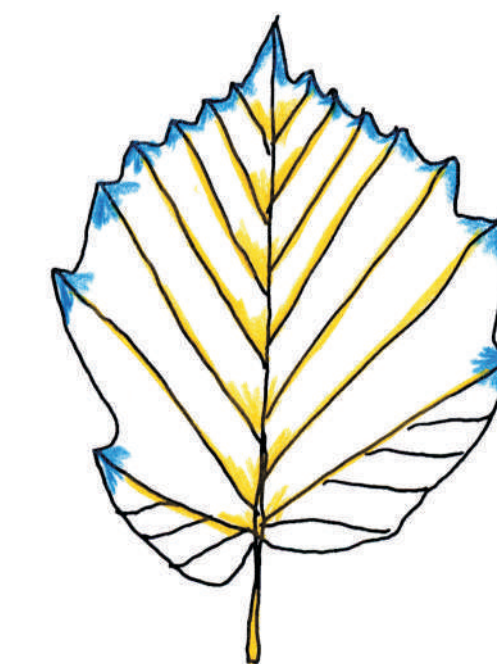
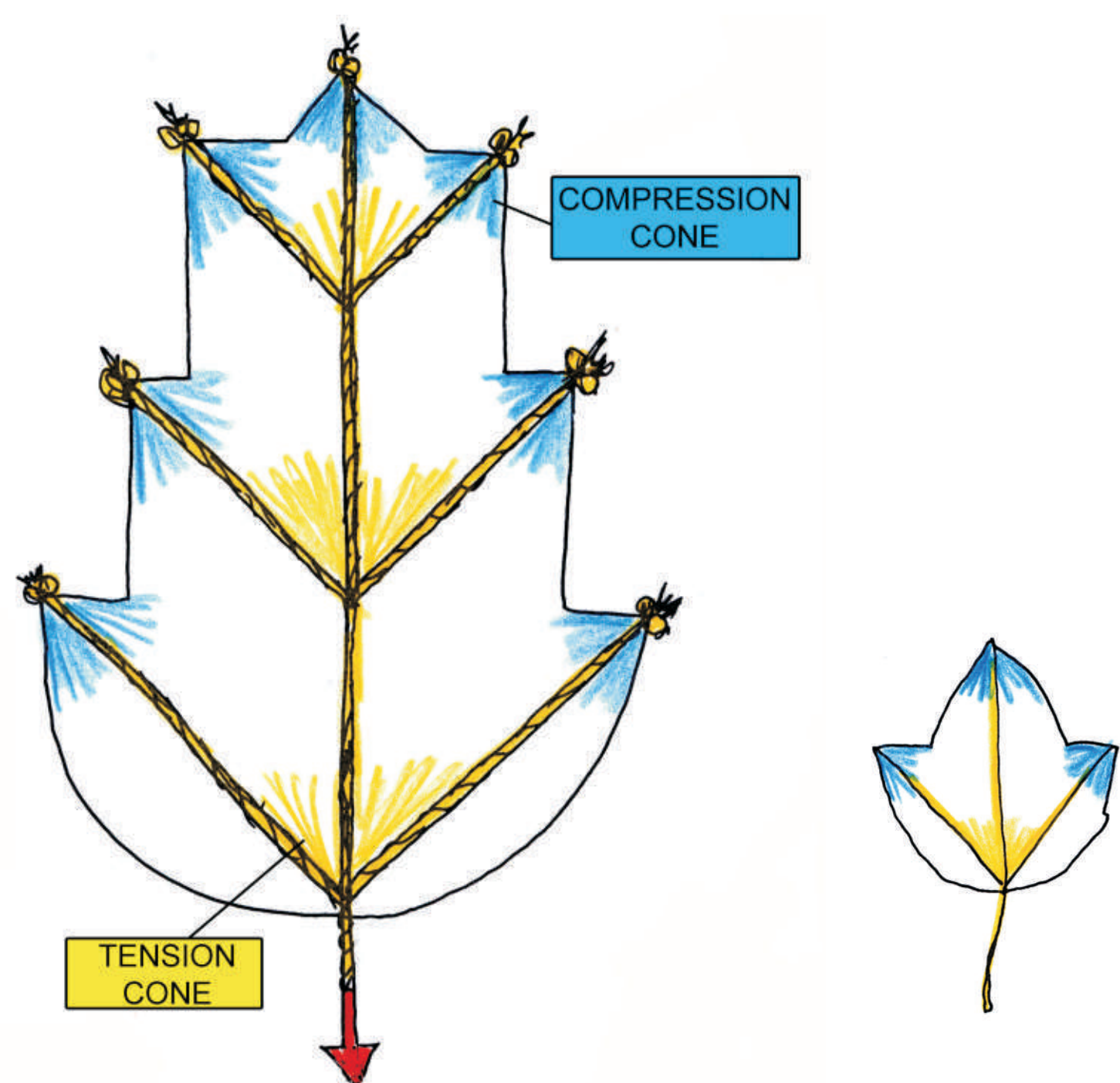
# Force Cones as Shaping Element in Leaves

C. Mattheck, K. Bethge, K. Weber

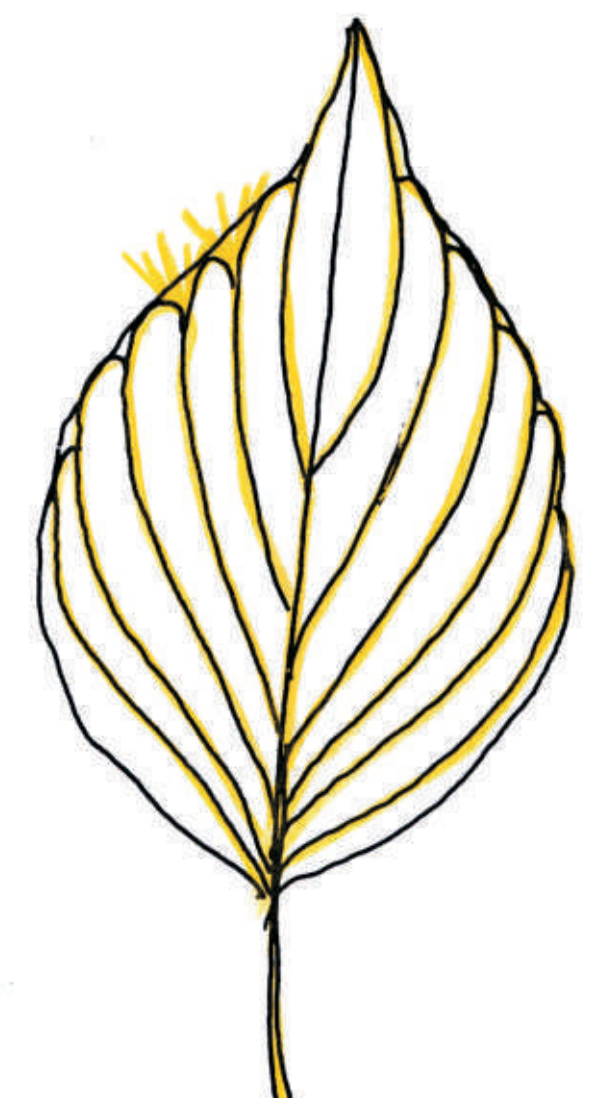
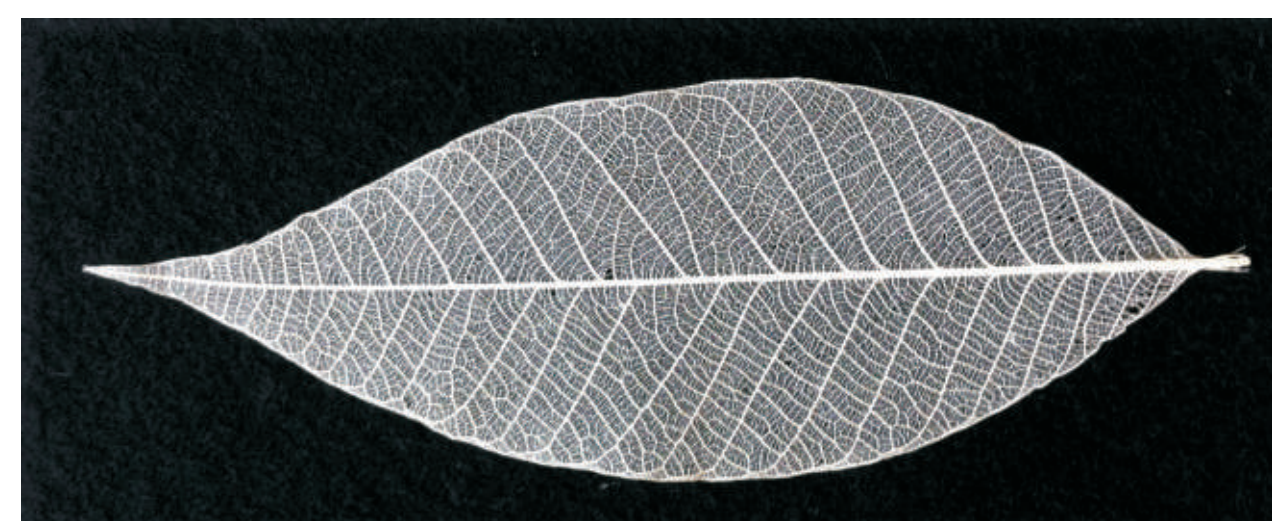
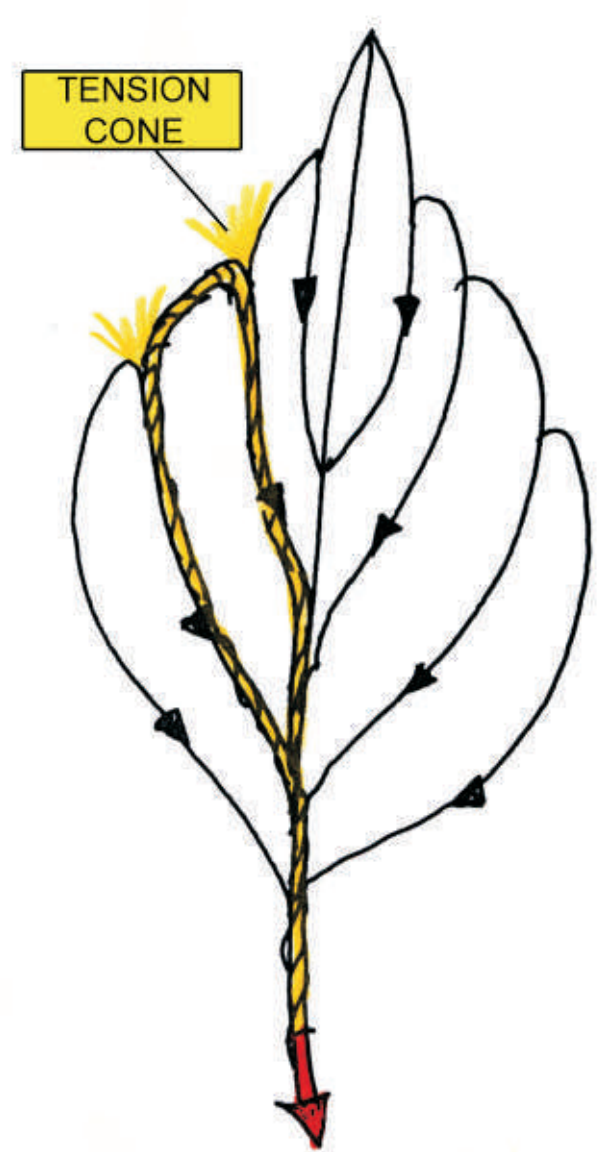


Four shear squares explaining the force cones originating from a single load

Indentations between compression cones



Tensile slings between tension cones



Mixed shapes with compression cones as well as tensile slings



Conclusion: Central bifurcations of veins form tension cones. The external contour of the leaf is defined by compression cones and tensile slings.