

A New Kind of Cracks in London Plane Trees

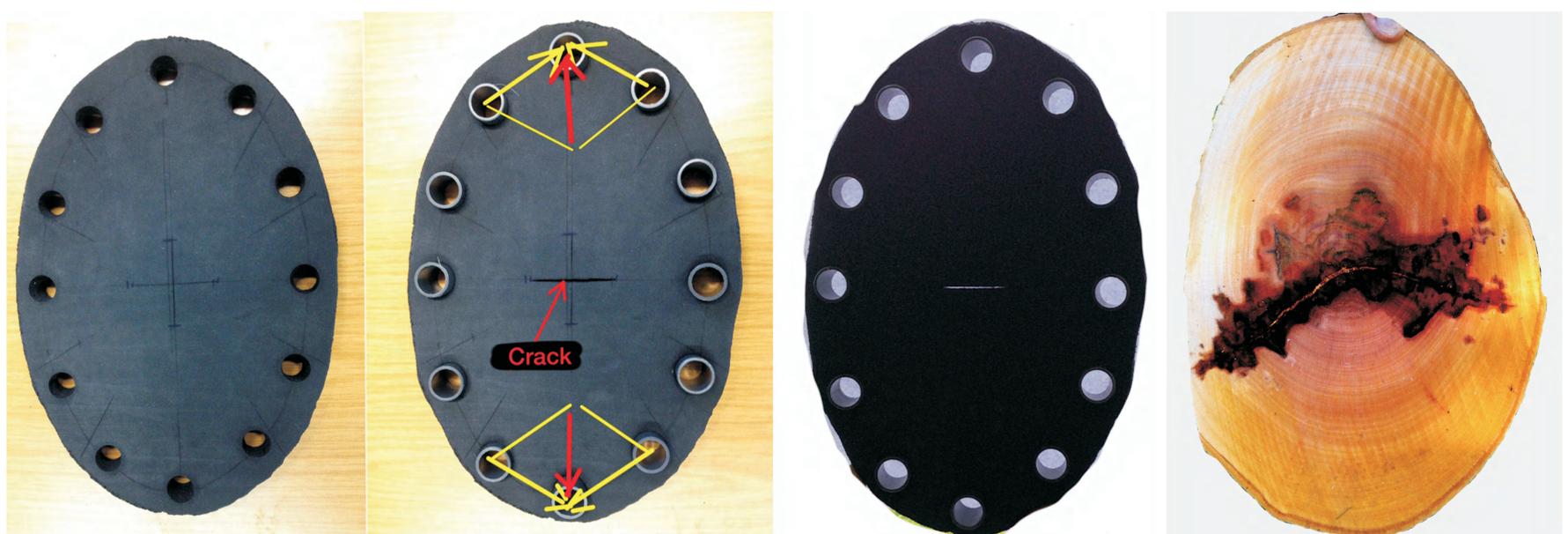
C. Mattheck, K. Bethge, K. Weber

What is the cause?

Longitudinal cracks in straight and only slightly curved branches are reported from arborists in Heidelberg. We thank Uwe von Taschitzki and Wolfgang Morr for their stimulation of this research.



If branches are ovalized by formation of tension or supporting wood, the radial component of circumferential compressive growth stresses might be one reason for crack formation.



Plugs expanding holes in a ovalized rubber plate, simulating circumferential compressive growth stresses, explain formation of cracks along wood rays.

Result: Localized higher circumferential curvature on top and bottom of branch cross-section indicate much growth, much growth stresses, resulting in vertical tensile stresses. Again, it seems to be vigour causing failure modes similar to brittle heart in tropical trees or end splitting of sawn trees.