Twitter Thread by Benedikt Kuhnhaeuser

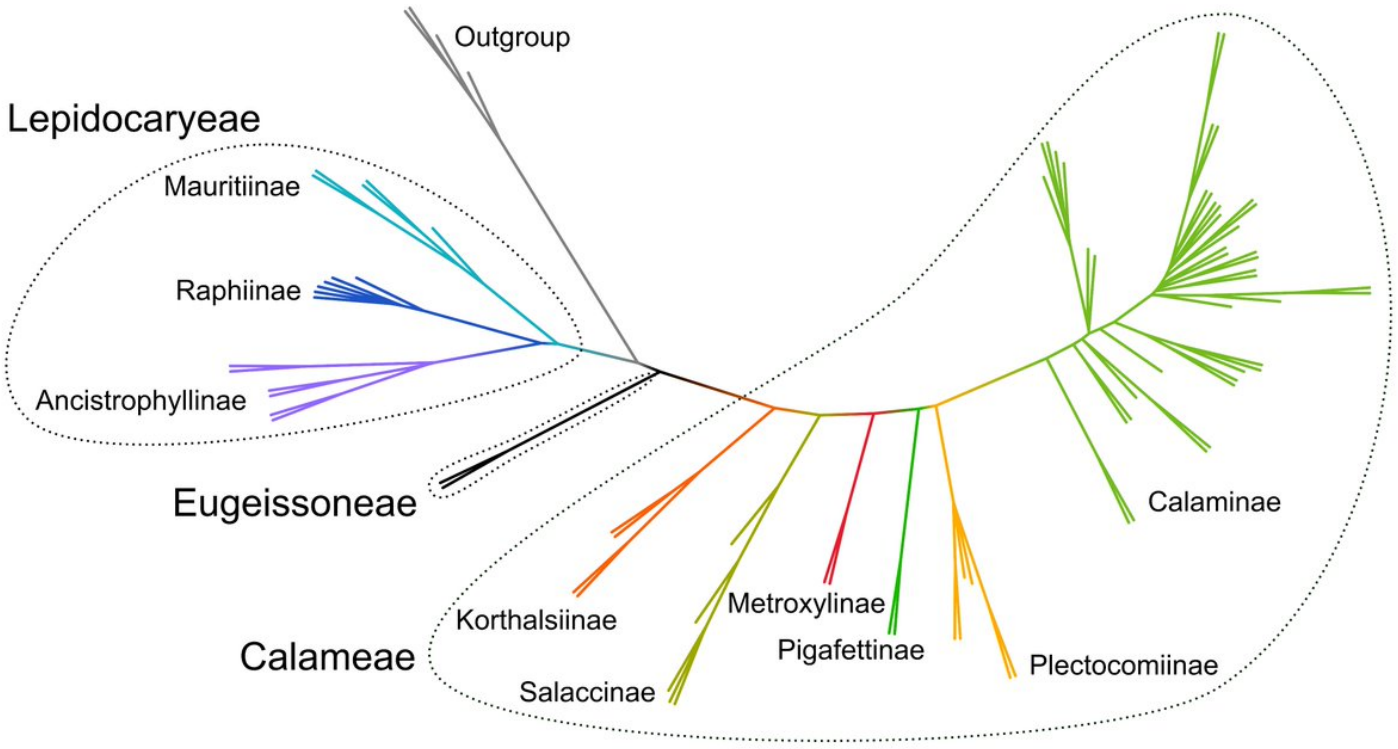
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The calamoid palms ■ have over 500 species spread across the world, but their higher-level relationships were a bit of a mystery. Until now.

Out today in #MolecularPhylogeneticsAndEvolution:

A robust phylogenomic framework for the calamoid palms https://t.co/JiCbSUlheH

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First some background info, so that you know what we are talking about:

Calamoid palms look a bit like snakes ■ (don't they!?!), because their fruits are covered in overlapping scales. And with their often fierce spines, they are equally fearsome. ■

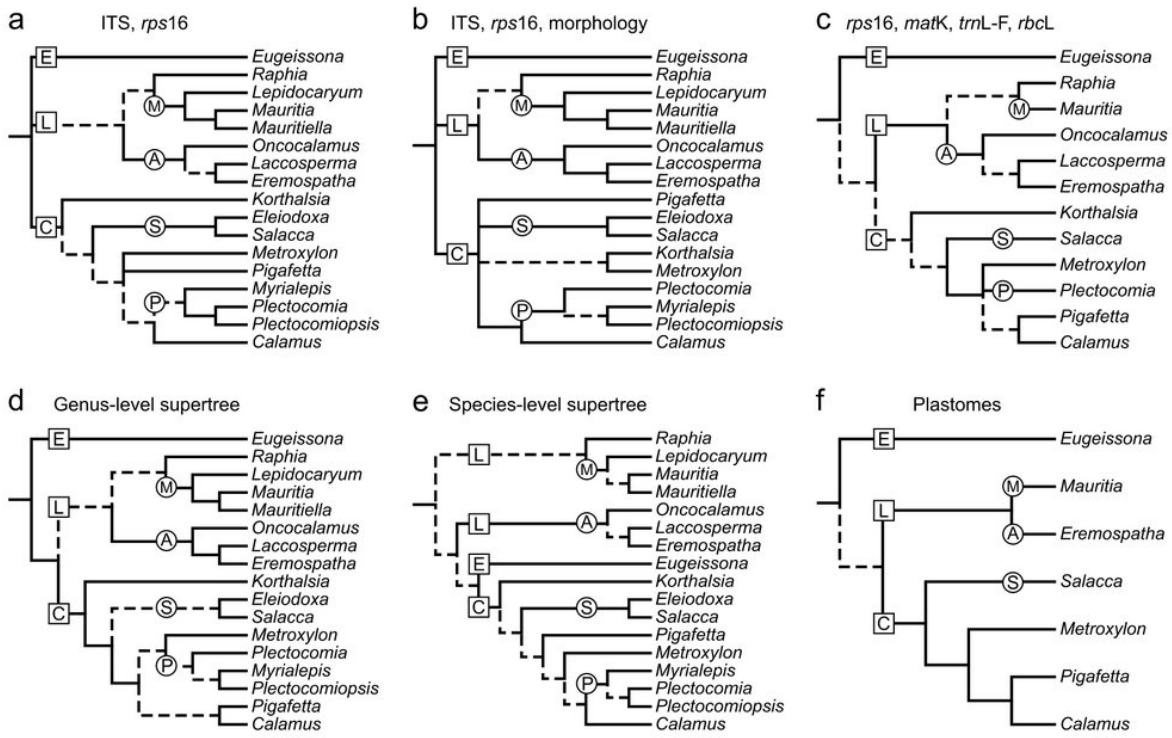


They are classified into 17 genera, 10 subtribes and 3 tribes. They have an amazing variety of growth forms, from stemless to climbing to tree habit. ■■



But as I said, their relationships have been a bit of a mystery. Here's the varying relationships previous studies found over the last 20 years.

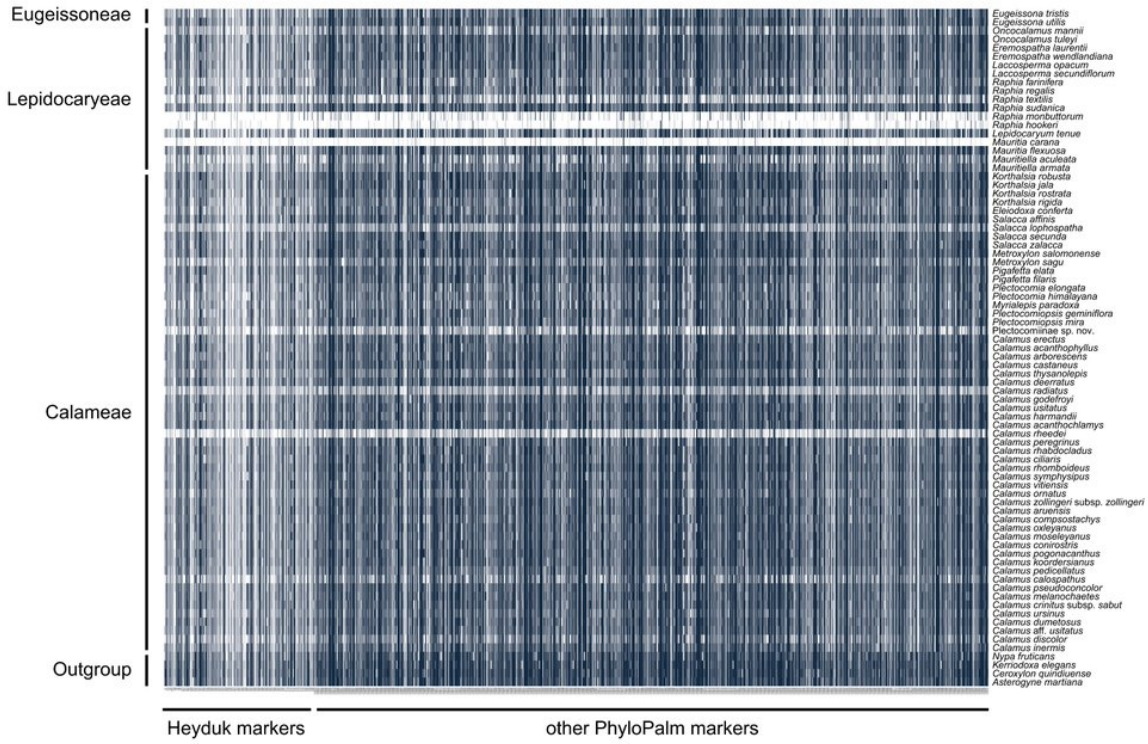
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We tackled this mystery with a phylogenomic approach: we sampled almost a thousand genes (a hundred times more than previous studies!) of 75 species representing all calamoid tribes, subtribes and genera.

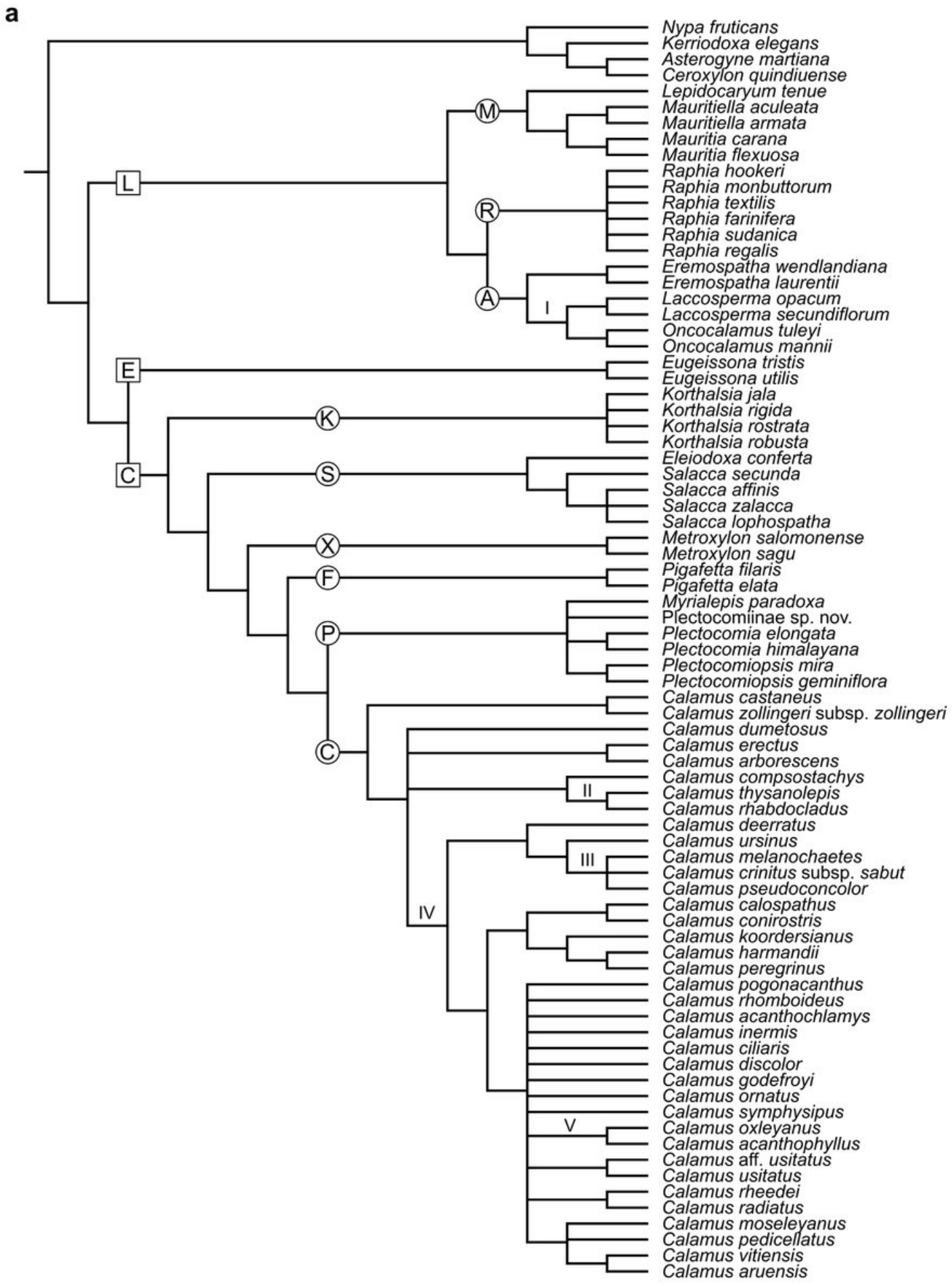
The resulting data matrix is pretty massive...

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With all this data, we were able to reconstruct the higher-level relationships with new confidence, and these results were stable no matter what method we used (we tried out quite a few...). Here's the strict consensus tree from all eight species trees we made.

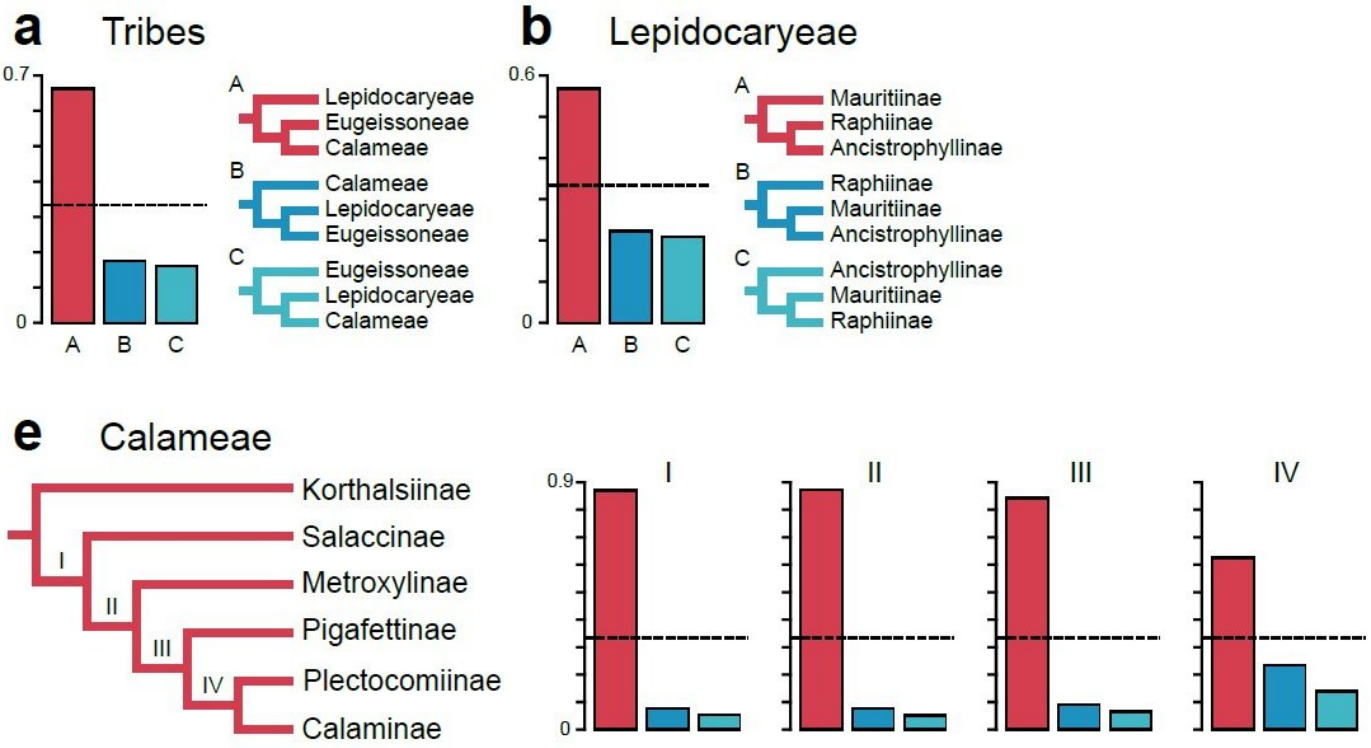
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How strong is gene tree conflict in our dataset?

For relationships among tribes and subtribes, a clear majority of gene trees supported the main topology. That's why we think that our results are very robust on that level.

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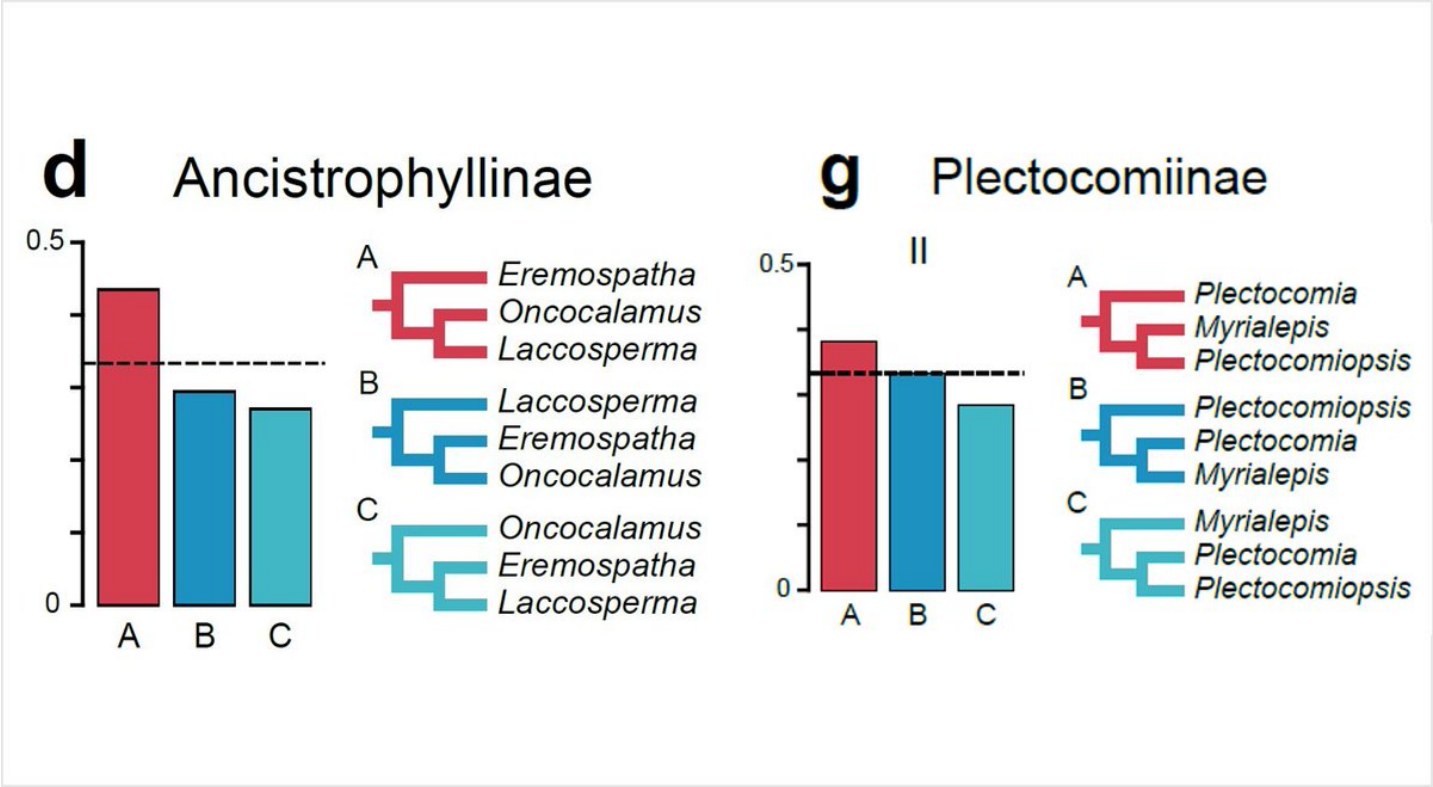


However, in subtribes Ancistrophyllinae and Plectocomiinae, there was a lot of gene tree conflict - similar proportions of gene trees support the 3 different possible relationships among genera.

Why? Hybridisation? Incomplete lineage sorting?

Further research needed!

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Finally, a huge thanks to my fantastic supervisors @BillJBaker, @w_eiserhardt, @Chomicki_G and Simon Hiscock (@OxfordPlants), and all other (equally great) co-authors: @SidonieBellot, @RowanSchley, @tlpcouvreur, and palm legends John Dransfield and Andrew Henderson.

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If you want to read more, feel free to use the below link for free access to the paper - it will work until 13 March 2021.

https://t.co/JiCbSUlheH

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