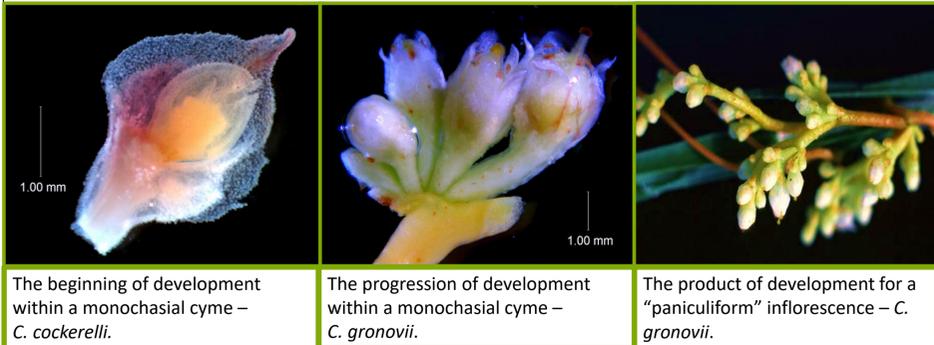


Introduction

- *Cuscuta* is a genus of obligate stem parasites evolved within Convolvulaceae₁ and has a nearly cosmopolitan distribution₂
- Small flowers, inflorescence architecture, and fruits must be relied on for *Cuscuta* species separation_{3,4}
- *Cuscuta* inflorescence types are described using racemose terminology; they are not racemose but instead cymose, more specifically monochasial cymes_{2,3}
- The type of monochasial cyme in *Cuscuta* species is not currently known



Research Objectives

1. Document the diversity of inflorescences in *Cuscuta* in a phylogenetic context
2. Study the meristematic development of major types of inflorescences in *Cuscuta*
3. Explore a possible relationship between the inflorescence diversity and sexual reproductive traits

Methods

Surveying inflorescence architecture

- Examine inflorescences of ~132 species and construct character evolution analyses using Mesquite

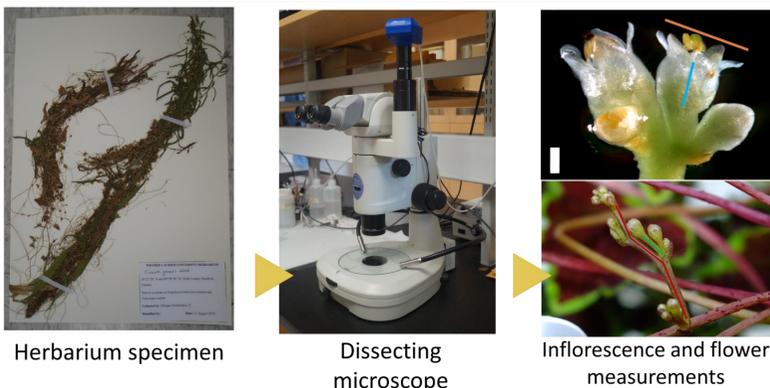
Studying meristematic development

- Grow plants from each subgenus (sampling depending on seed availability) to examine inflorescence development

Examining relationships

- Use Principal Component Analysis to summarize dataset into components, then examine correlations with sexual reproductive traits

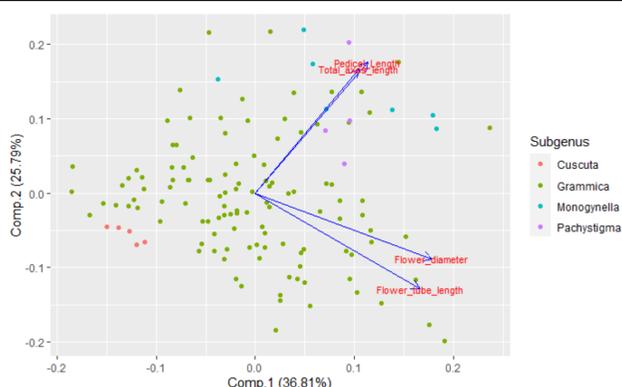
Surveying inflorescence architecture



Blue-flower tube length
Orange-flower diameter

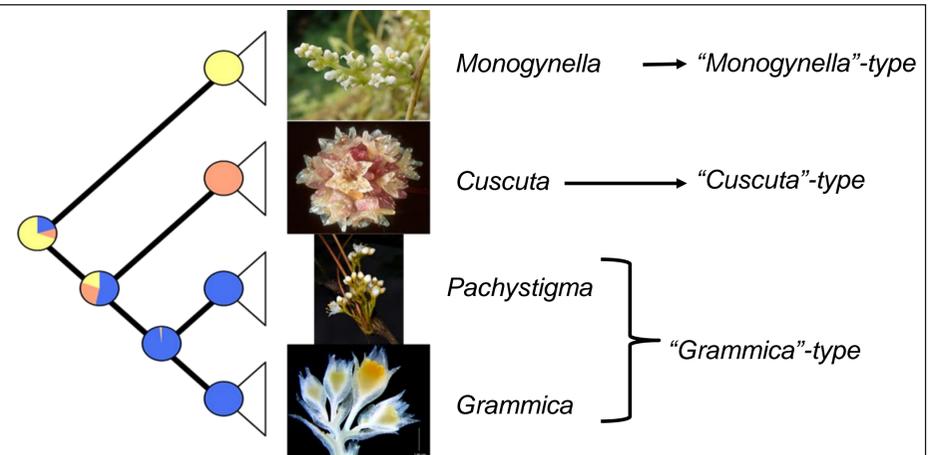
Red-the total length of axes
Green- the longest pedicel

Principal Component Analysis



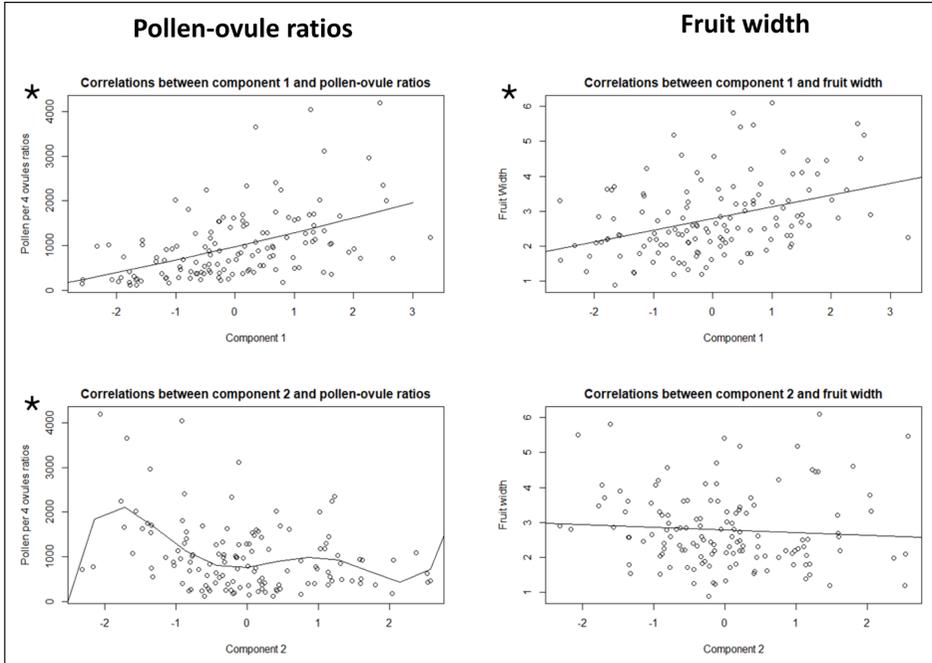
Principal component analysis (PCA) biplot of component 1 and component 2 using the inflorescence variables. Colour groups show the different subgenera in *Cuscuta*.

Likelihood ancestral reconstruction



Character evolution of the inflorescence types within the four subgenera of *Cuscuta*.

Correlations with sexual reproductive traits



Conclusions

- ✓ *Cuscuta* has three major types of inflorescences
- ✓ The fundamental inflorescence unit is a cincinnus monochasial cyme
- ✓ Similar breeding systems may have different inflorescence architectures

References

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