

BIOL 1012 Midterm 2 Review

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What are some of the key differences between eukaryotes and prokaryotes?

- WHEN DID THEY ORIGINATE
- ORGANELLES
- GENETIC CONTENT
- REPRODUCTION

Key Points in Evolutionary History

- Stromatolites (When did they arise? What are they?)
- When did eukaryotes first arise?
- Oxygen revolution (What is it, what caused it, and when did it happen?)

What are extremophiles? What are the 2 main types of extremophiles and can you give a brief explanation of each?

Match the nutritional mode to its energy and carbon sources.

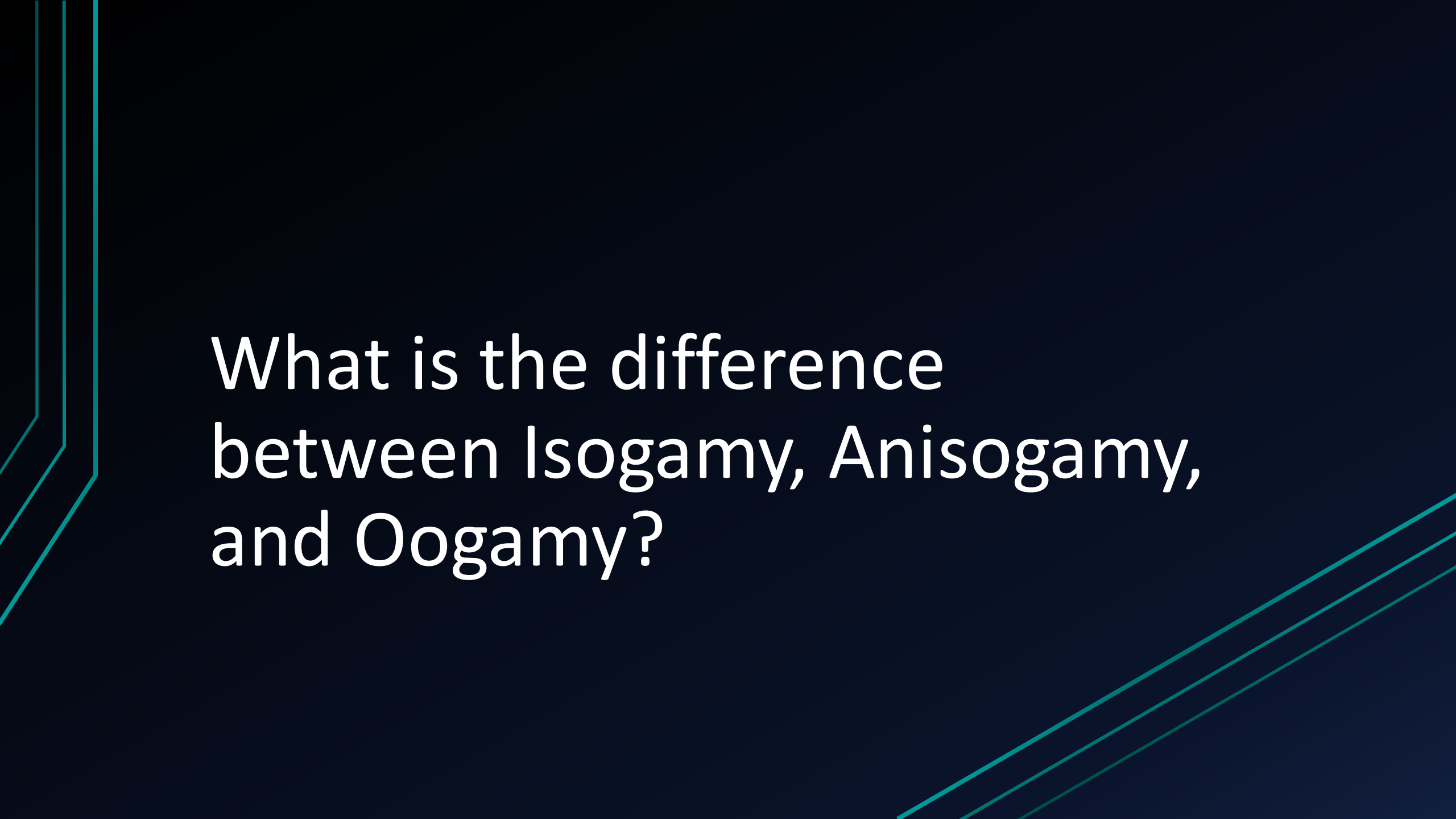
- Photoautotroph
- Chemoautotroph
- Photoheterotroph
- Chemoheterotroph
- Light & Organic Compounds
- Inorganic chemicals & CO₂
- Organic Compounds (for energy and food)
- Light & CO₂

Prokaryotic Traits

- What are 3 main shapes?
- How is the cell wall different from eukaryotes? (Gram Status?)
- How do they move?
- Genetic Recombination?

Match the type of reproduction to its definition

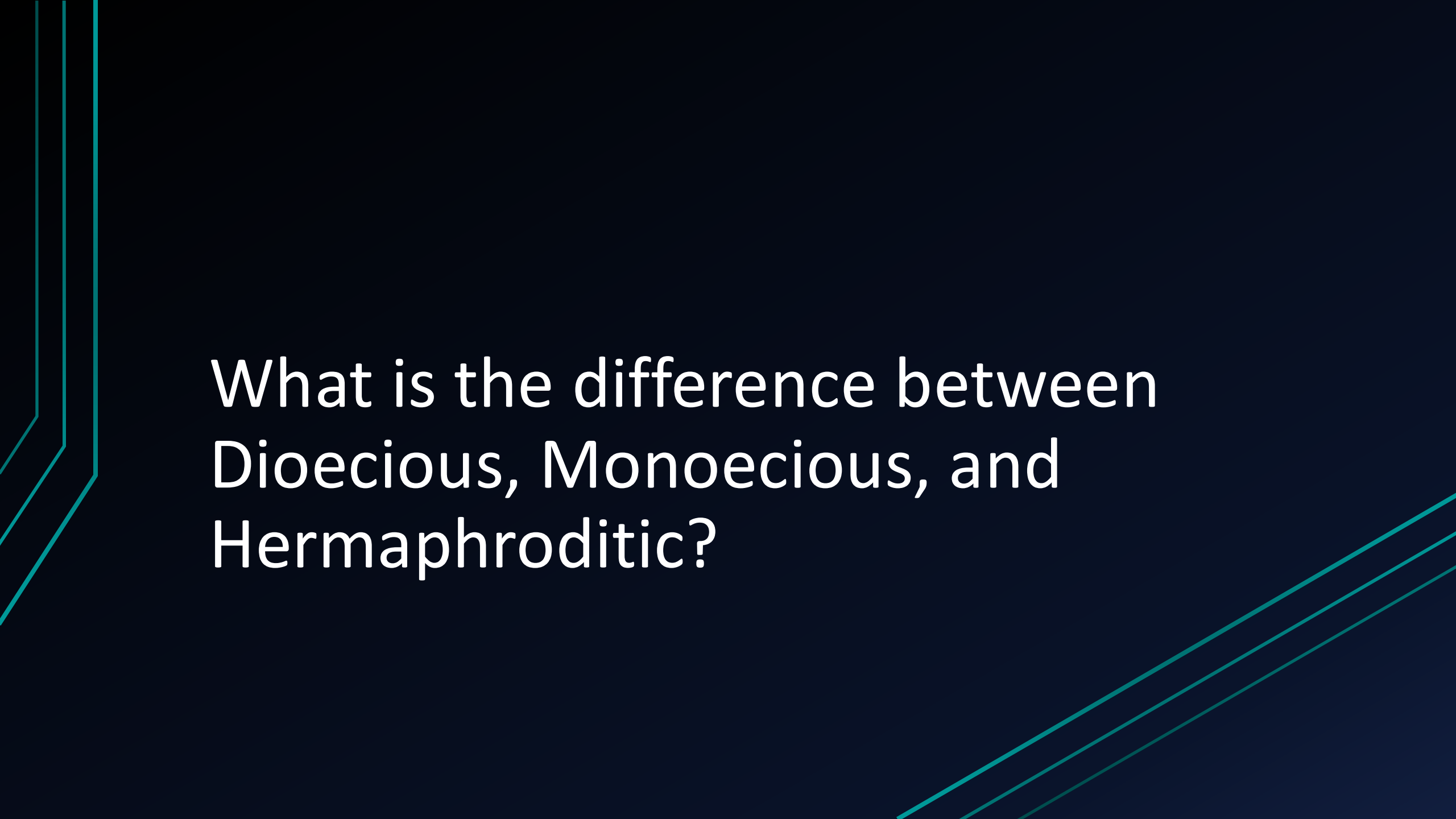
- Binary Fission
- Budding
- Fragmentation
- Parthenogenesis
- Sexual Reproduction
- Small outgrowths on organisms break off and form separate organism
- Development of an egg without any fertilization
- Occurs in prokaryotes, DNA is duplicated, and cell stretches and separates
- Fusion of gametes producing offspring
- Organism breaks into pieces and each piece becomes separate organism



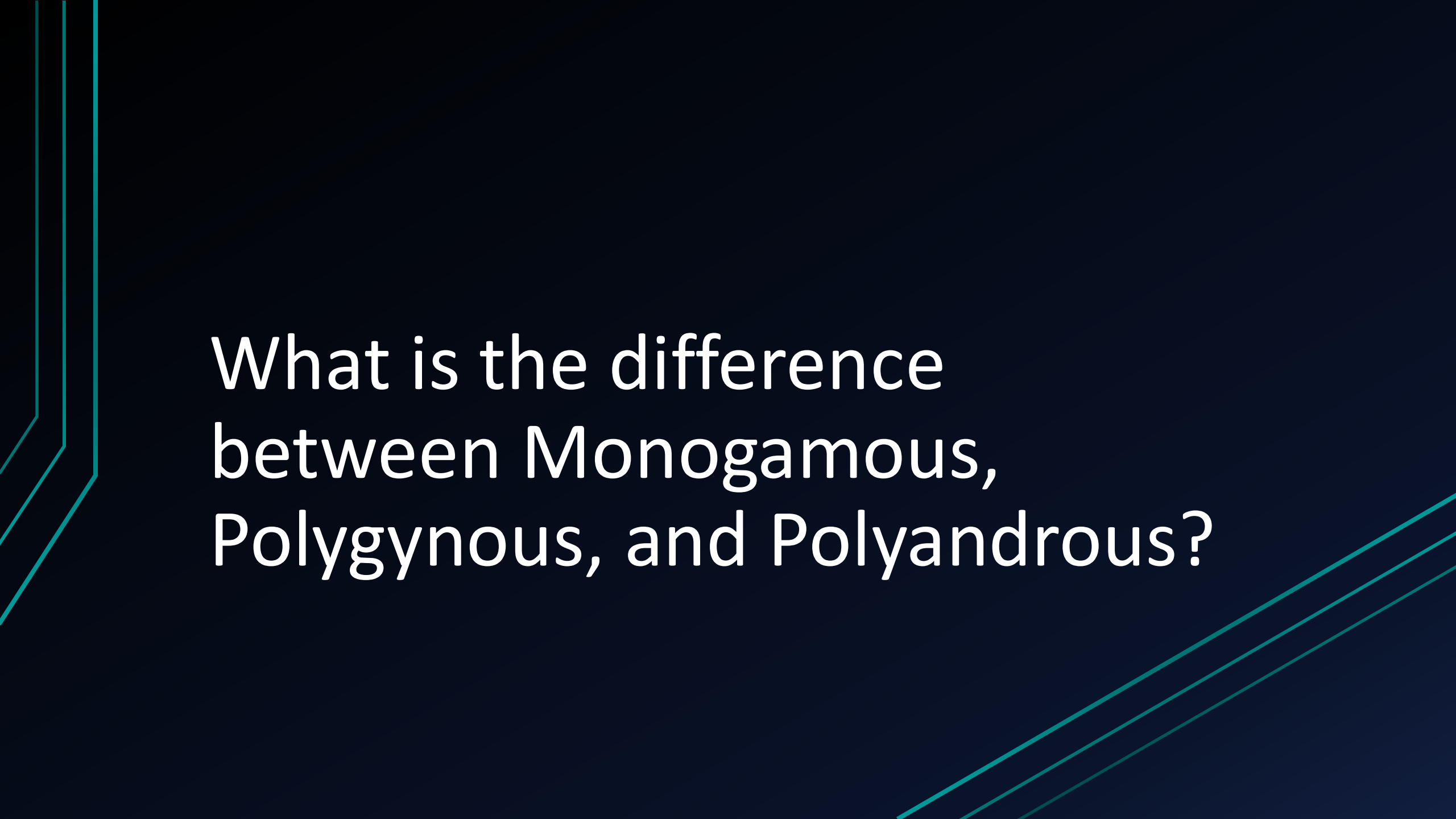
What is the difference
between Isogamy, Anisogamy,
and Oogamy?

What is the difference between Diplontic, Haplontic, and Haplodiplontic?

(WHAT ARE ADVANTAGES AND DISADVANTAGES OF EACH? WHAT TYPES OF ORGANISMS EXHIBIT EACH?)



What is the difference between
Dioecious, Monoecious, and
Hermaphroditic?



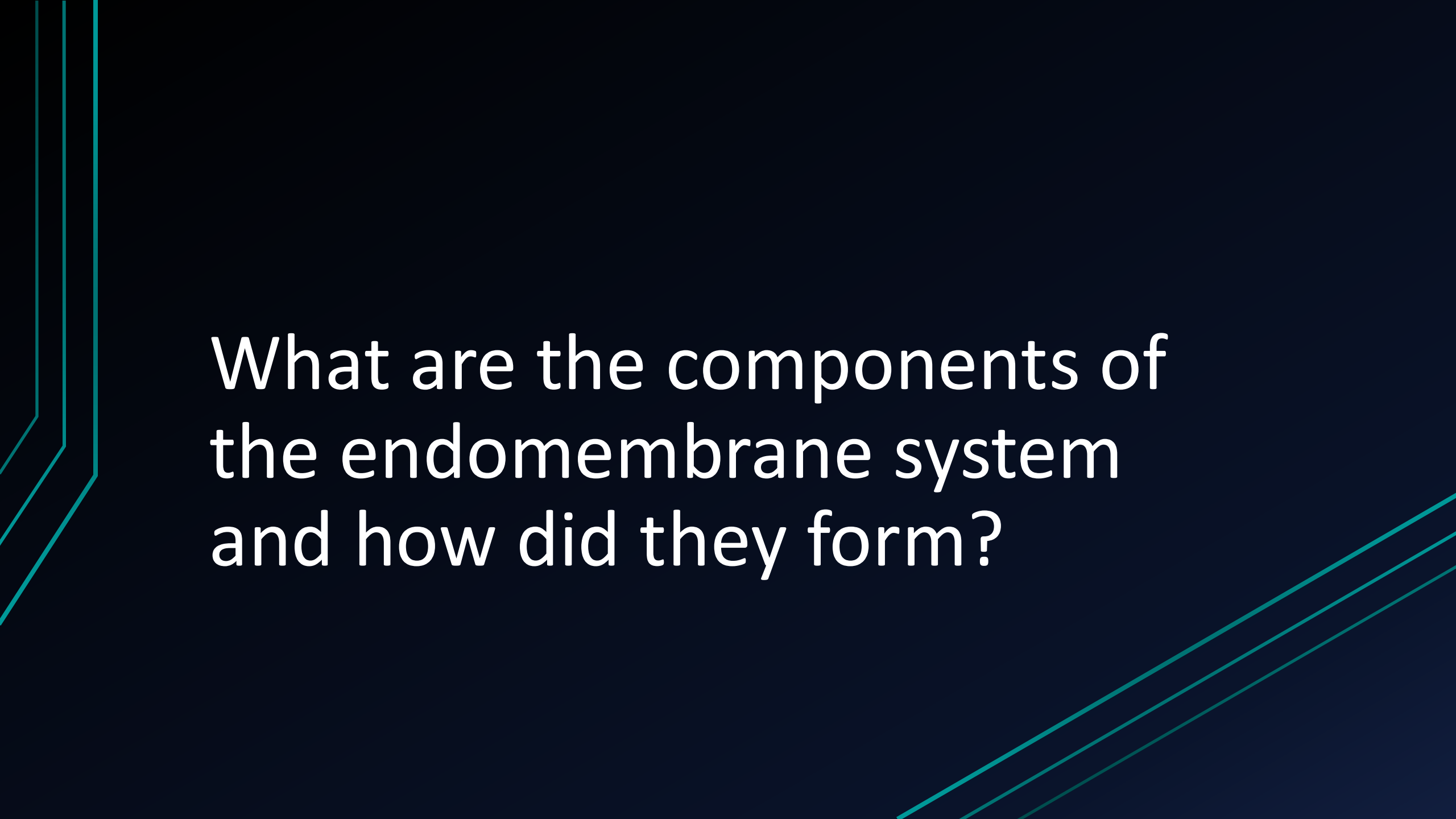
What is the difference
between Monogamous,
Polygynous, and Polyandrous?

Match the trait to the definition

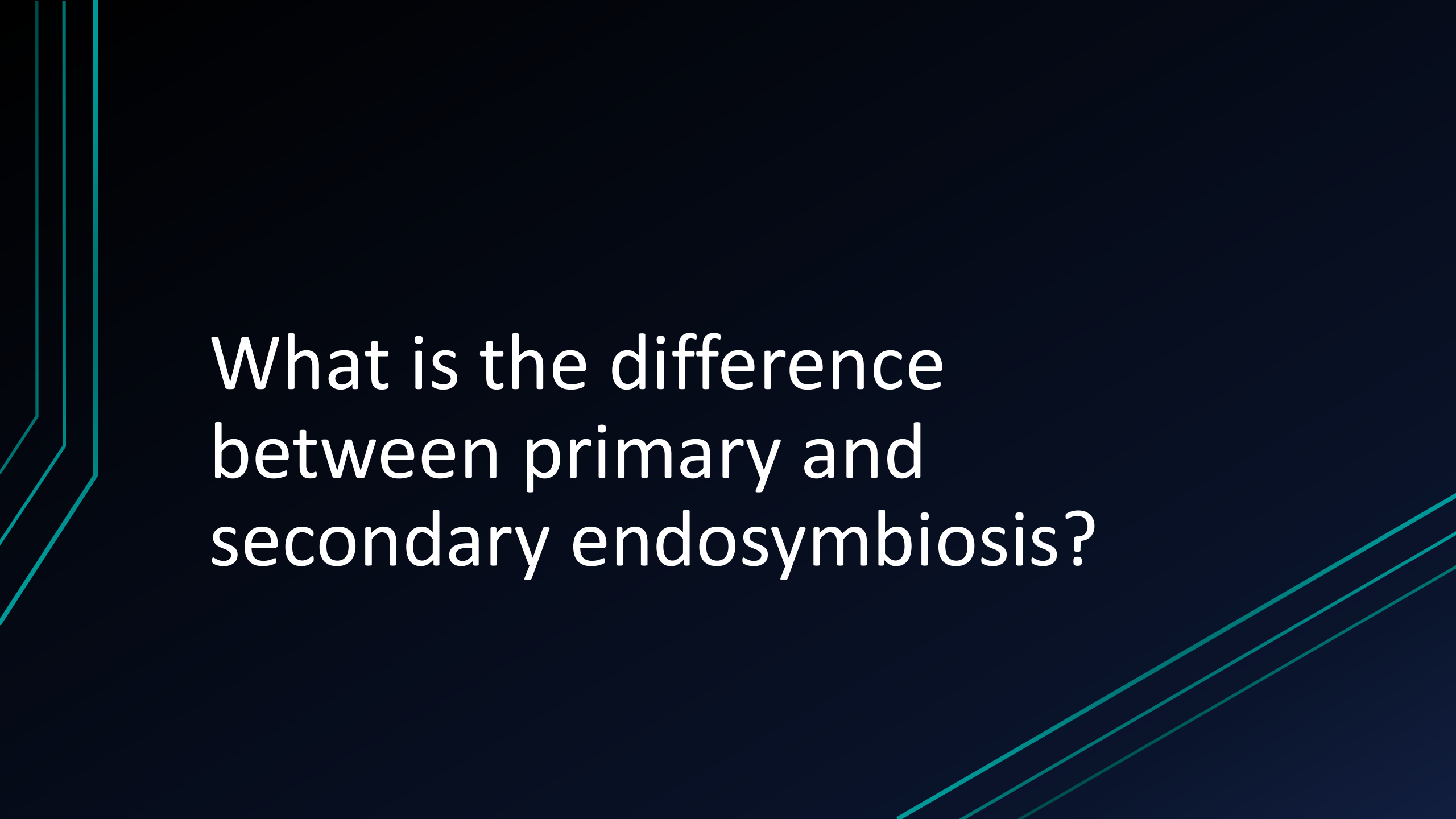
- Sexual Dimorphism
- Intrasexual Selection
- Intersexual Selection
- Members of one sex choosing mates based on traits
- Competition between organisms of the same sex for a mate
- Differences in secondary sexual characteristics

Functions of the cytoskeleton

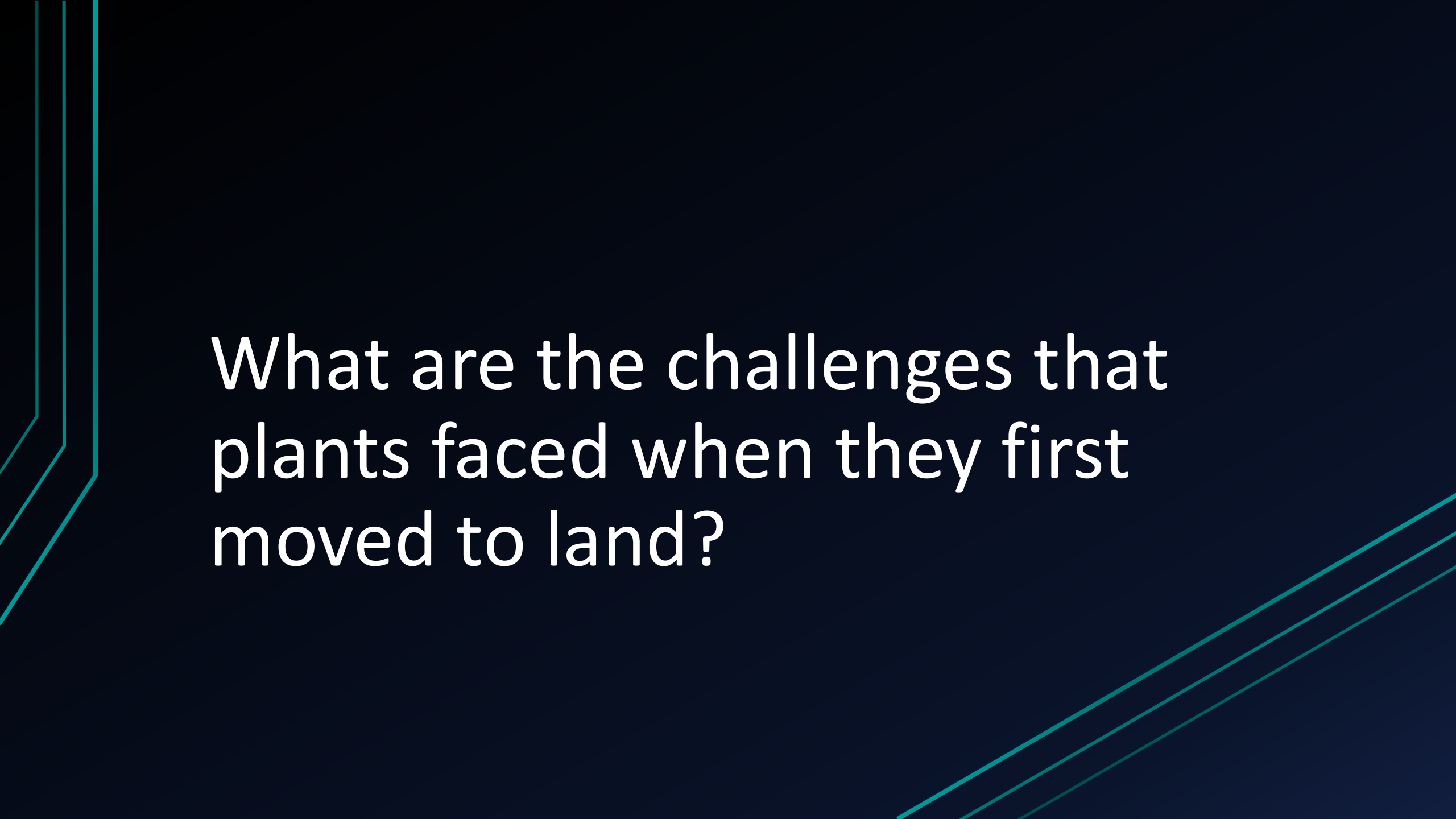
- Cytoplasmic streaming
- Cell shape and organelle position
- Motility
- Phagotrophy



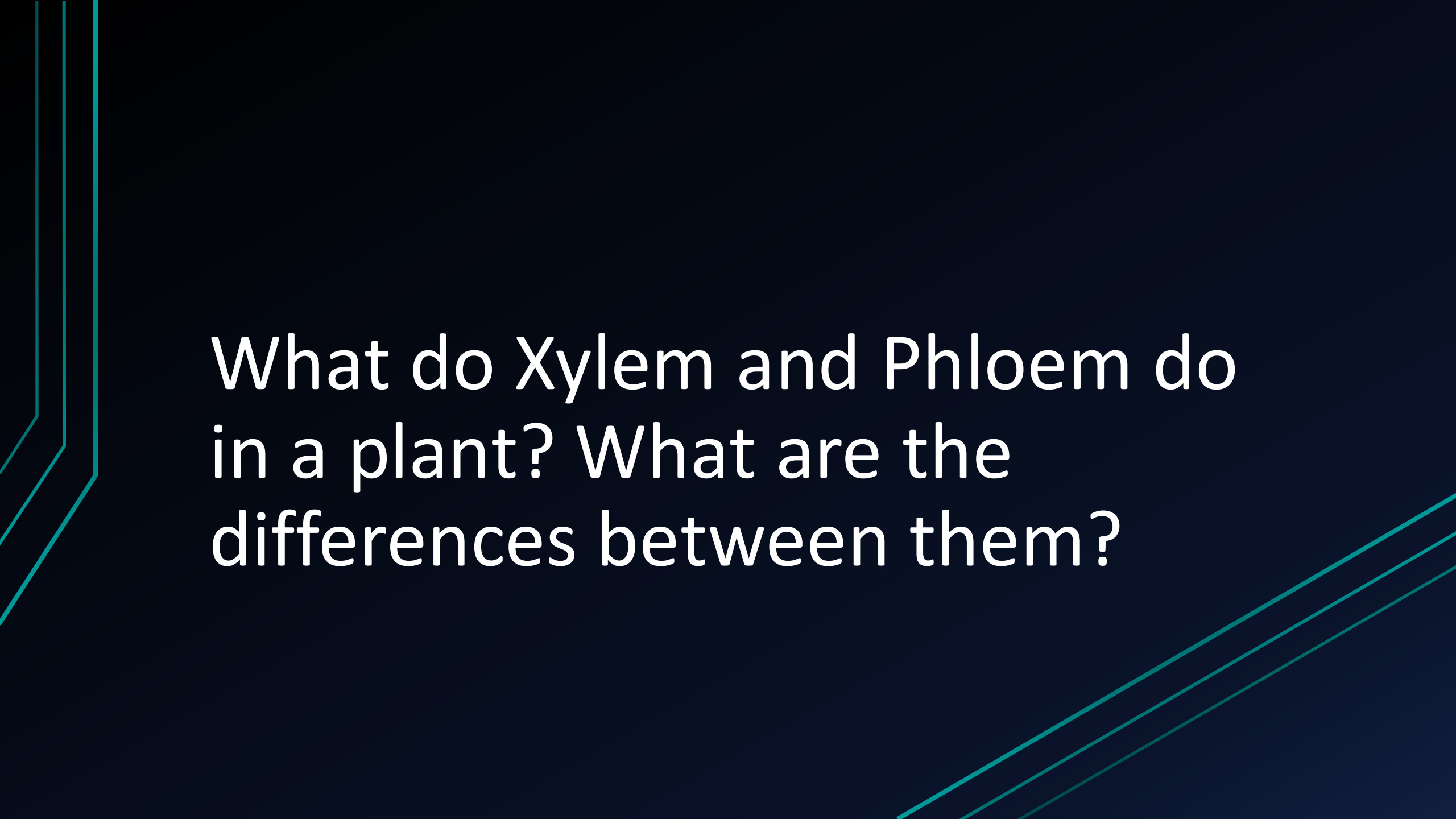
What are the components of
the endomembrane system
and how did they form?



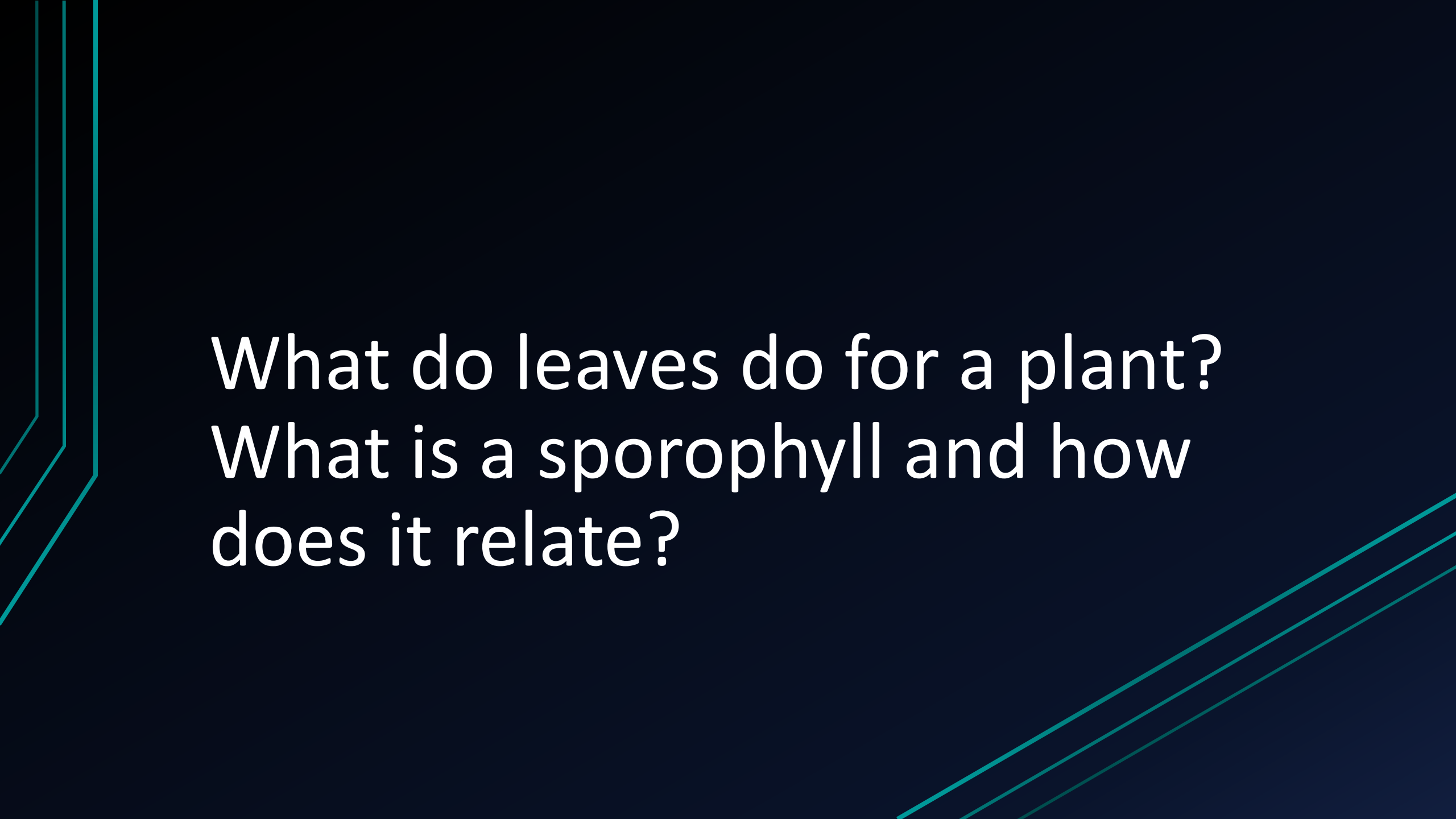
What is the difference
between primary and
secondary endosymbiosis?



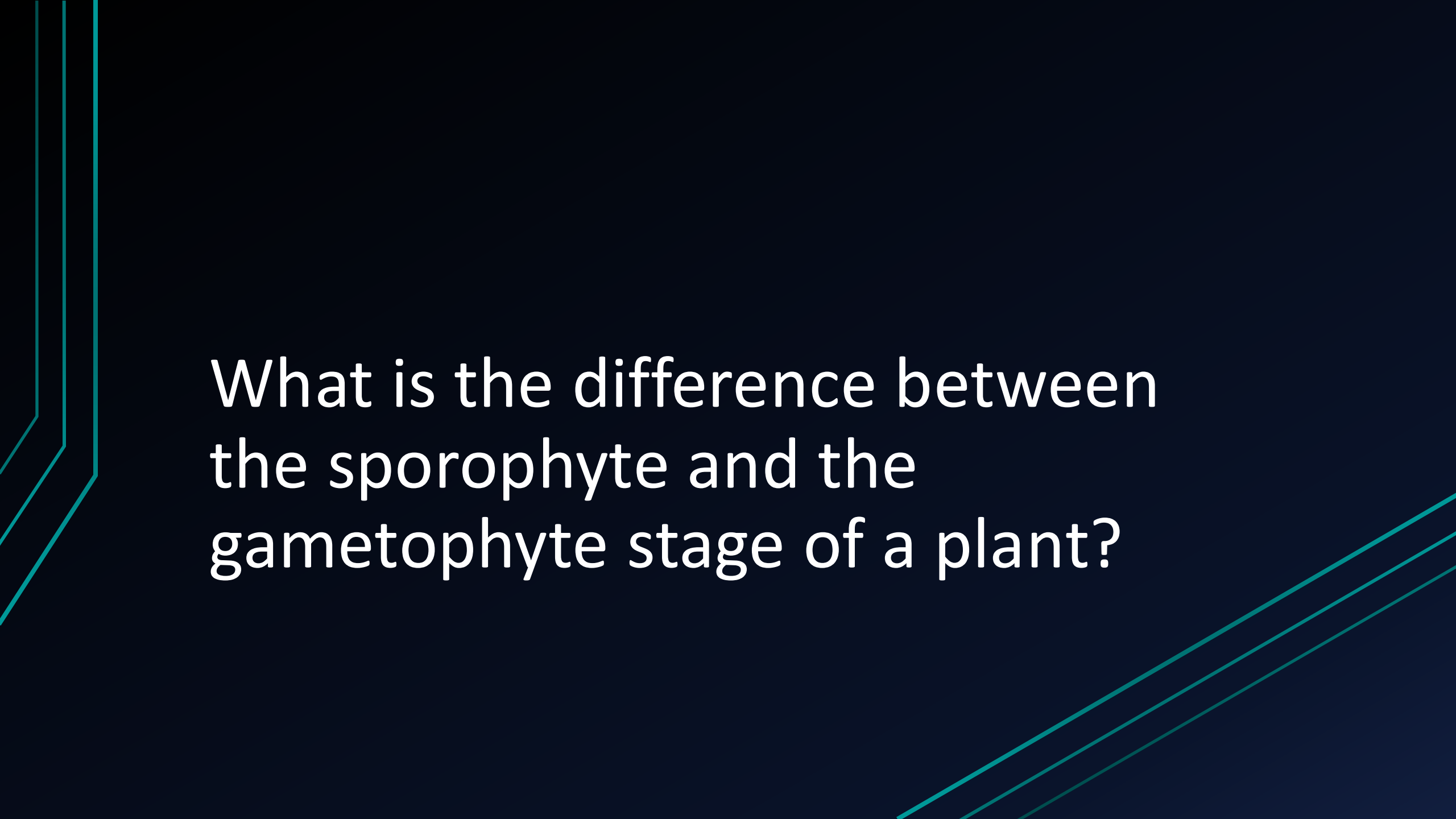
What are the challenges that plants faced when they first moved to land?



What do Xylem and Phloem do in a plant? What are the differences between them?



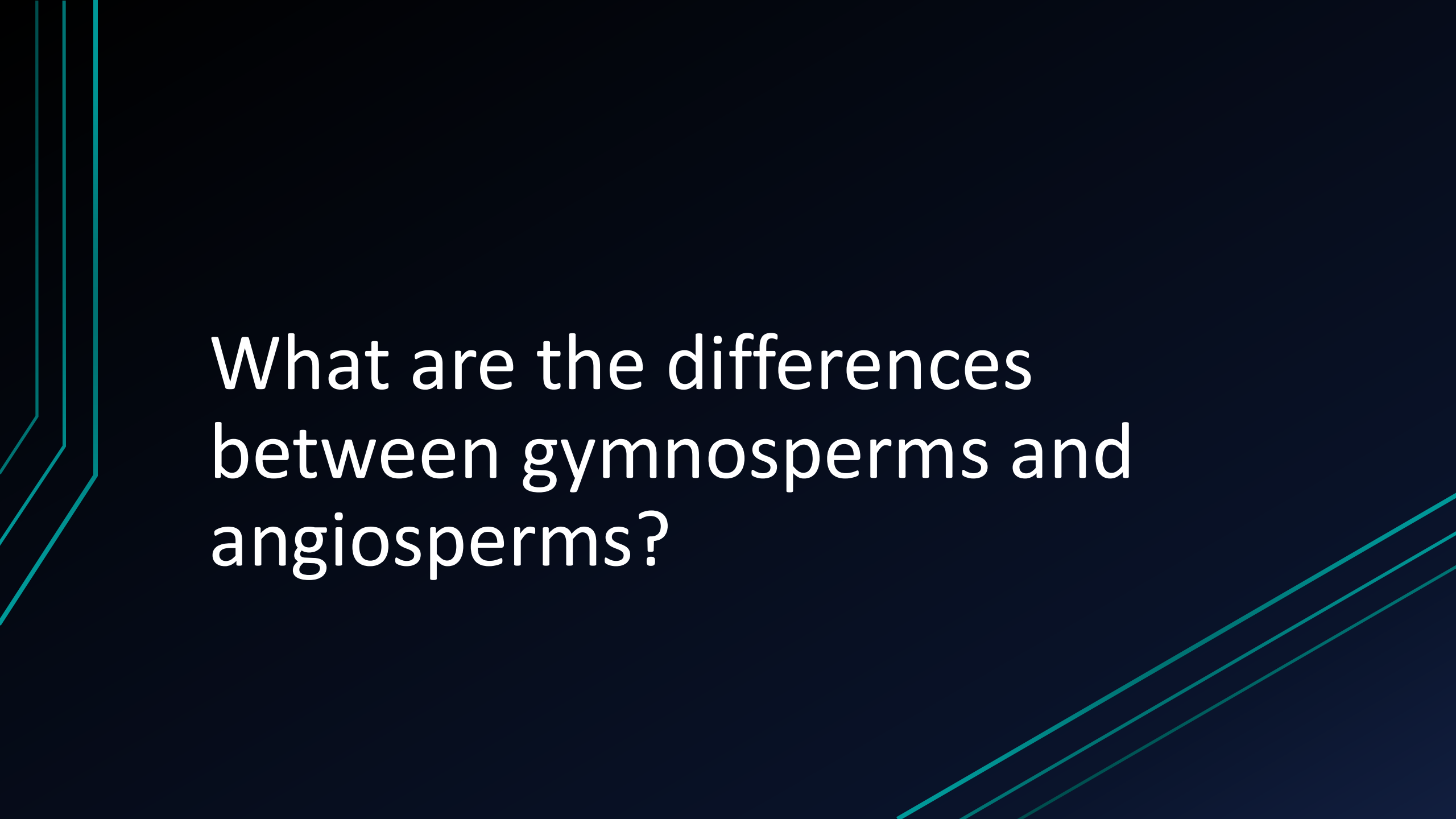
What do leaves do for a plant?
What is a sporophyll and how
does it relate?



What is the difference between the sporophyte and the gametophyte stage of a plant?



Why was the evolution of
seeds favourable for plants?



What are the differences
between gymnosperms and
angiosperms?

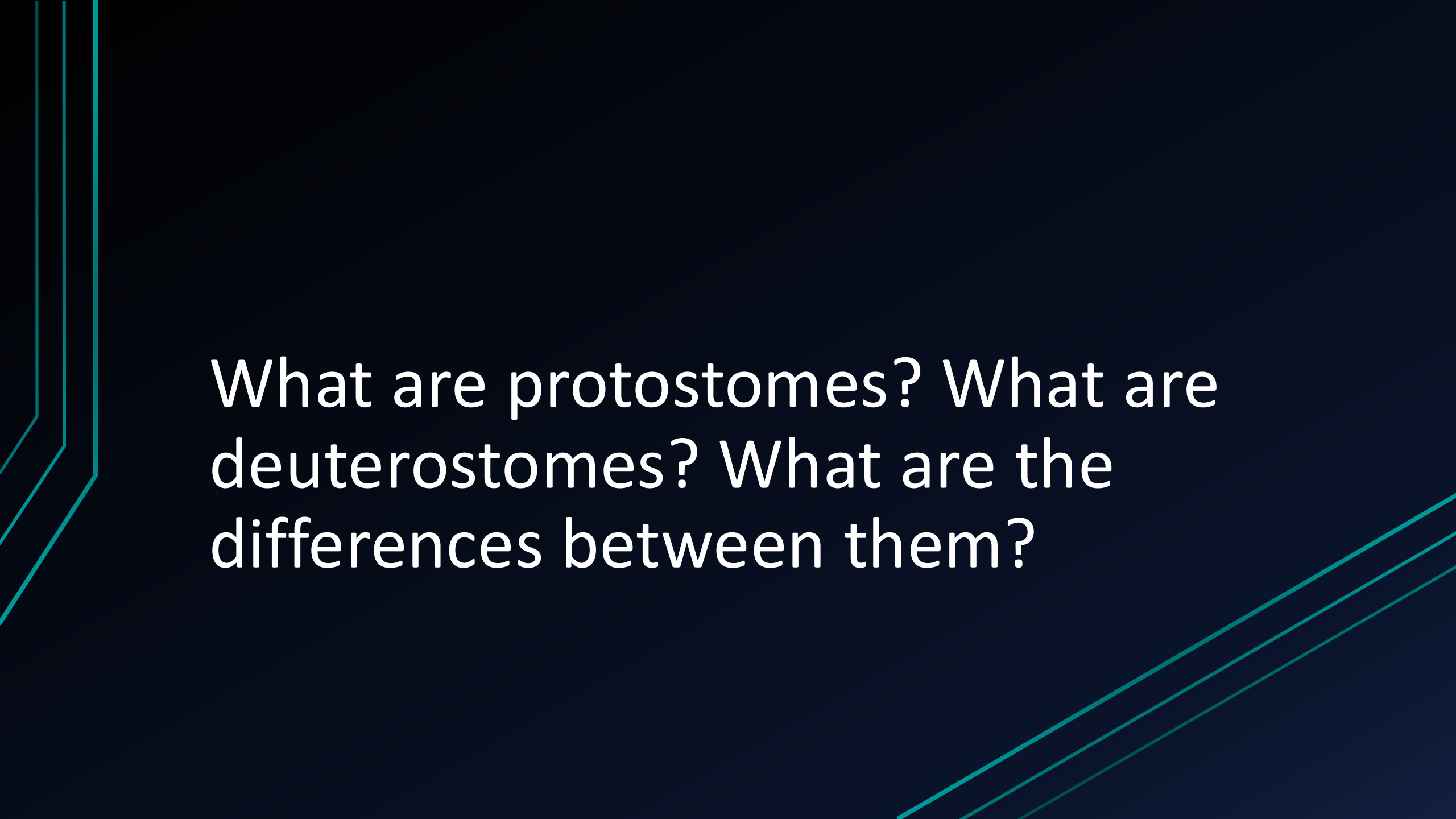
What are hyphae? What organisms are they present in (which part of the life cycle)? How do they compare to roots in plants?

Fungi

- Ecological roles?
- Relationships with other organisms?
- When did they colonize land (relative to other organisms)?
- What is “Heterokaryotic”?
- What are Plasmogamy and Karyogamy?
- What other organisms fall under same supergroup?

Animals

- Porifera (Level of organization, cell types, feeding type, symmetry)
- Cleavage and Gastrulation
- Diploblasts (Ectoderm vs Endoderm)
- Cnidaria and Ctenophores (Level of Organization, forms, symmetry)
- Bilateria (Cephalization, level of organization, symmetry)
- Triploblasts (Ectoderm, Endoderm, Mesoderm)



What are protostomes? What are deuterostomes? What are the differences between them?