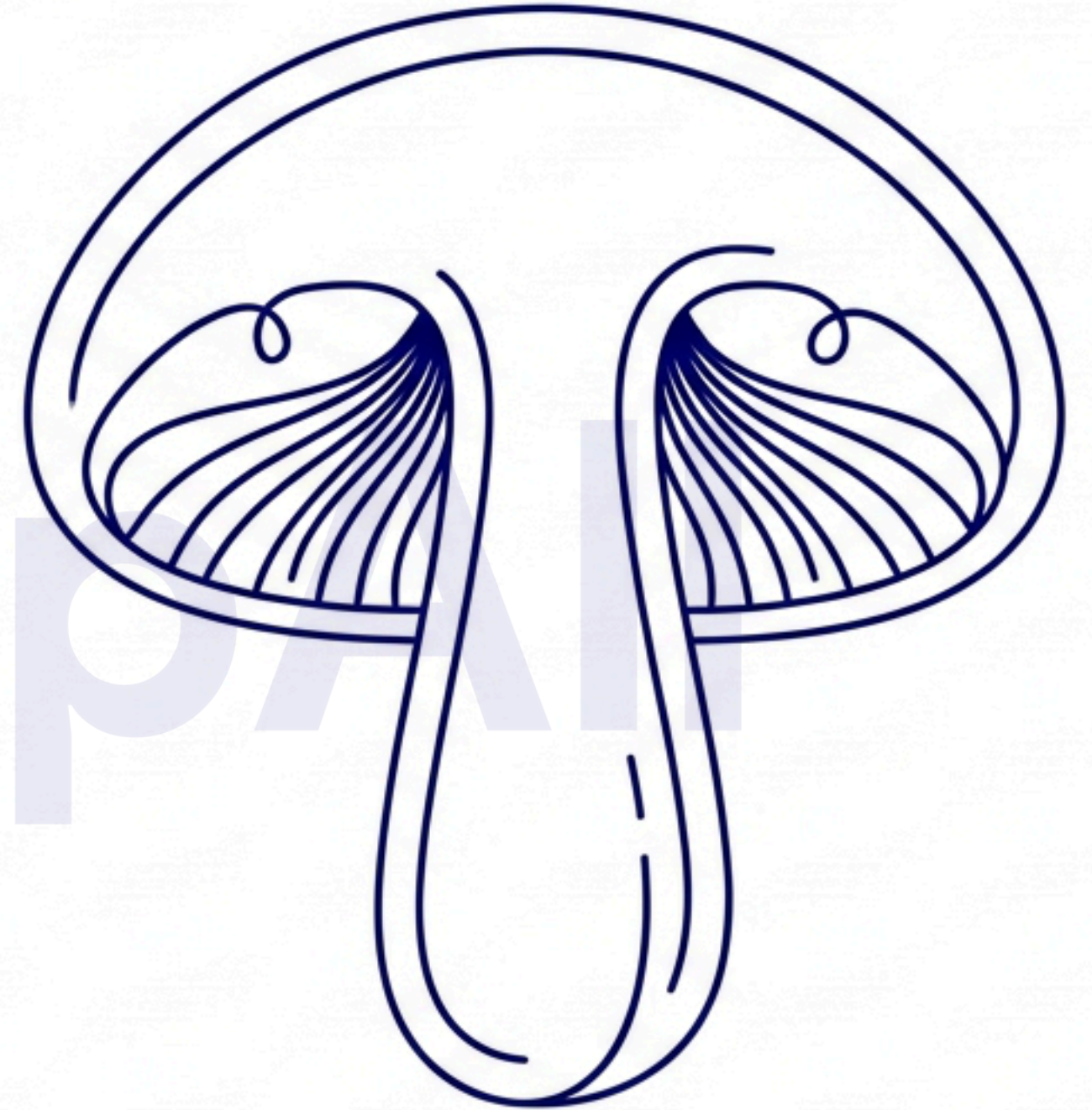


Basidiomycetes: Mushrooms, Rusts and Smuts



Gross Morphology & Ecological Habitats

Fruiting Bodies (Basidiocarps)



Mushrooms



Bracket
Fungi



Puffballs

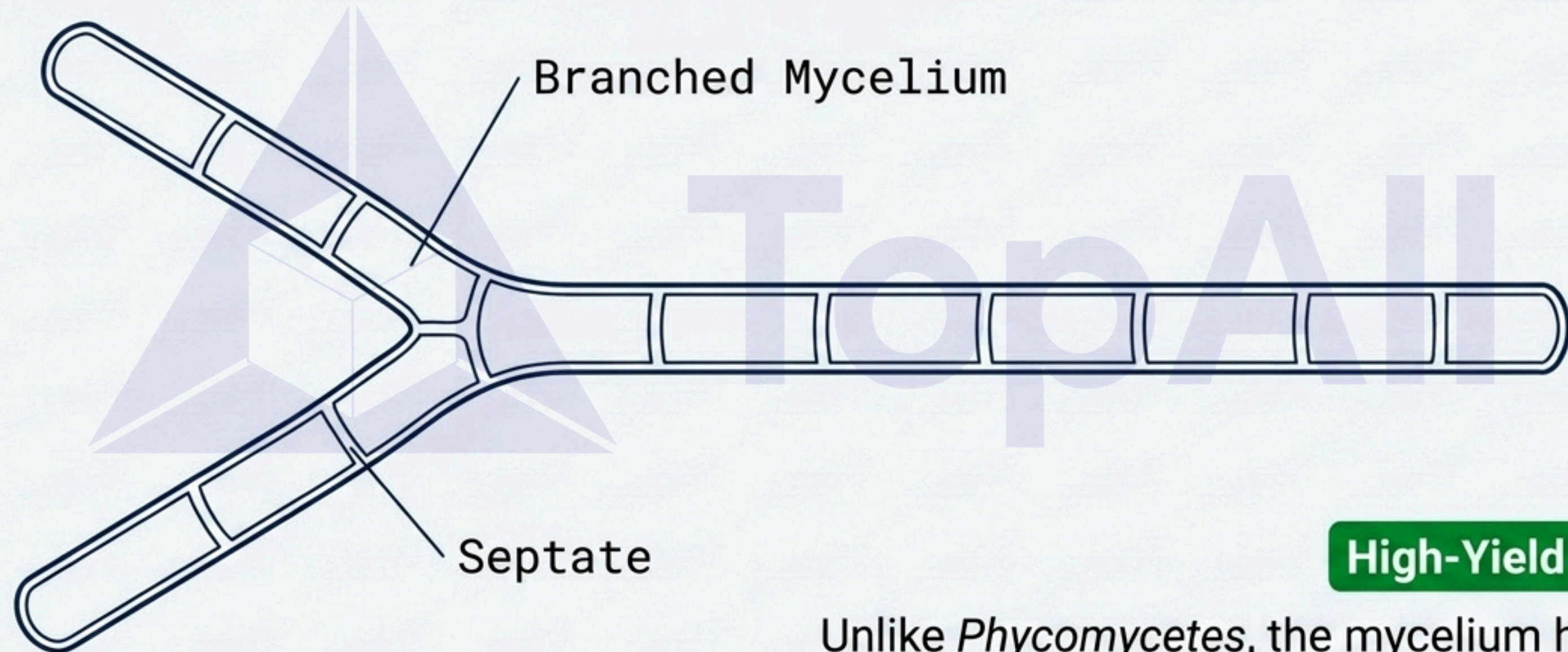
Growth Environments

- Soil
- Logs
- Tree Stumps

PARASITIC HAZARD

Often found inhabiting living plant bodies as destructive parasites (e.g., rusts and smuts).

Microscopic View: The Vegetative Body



High-Yield Trait

Unlike *Phycomycetes*, the mycelium here is heavily partitioned (**septate**) and **branched**.

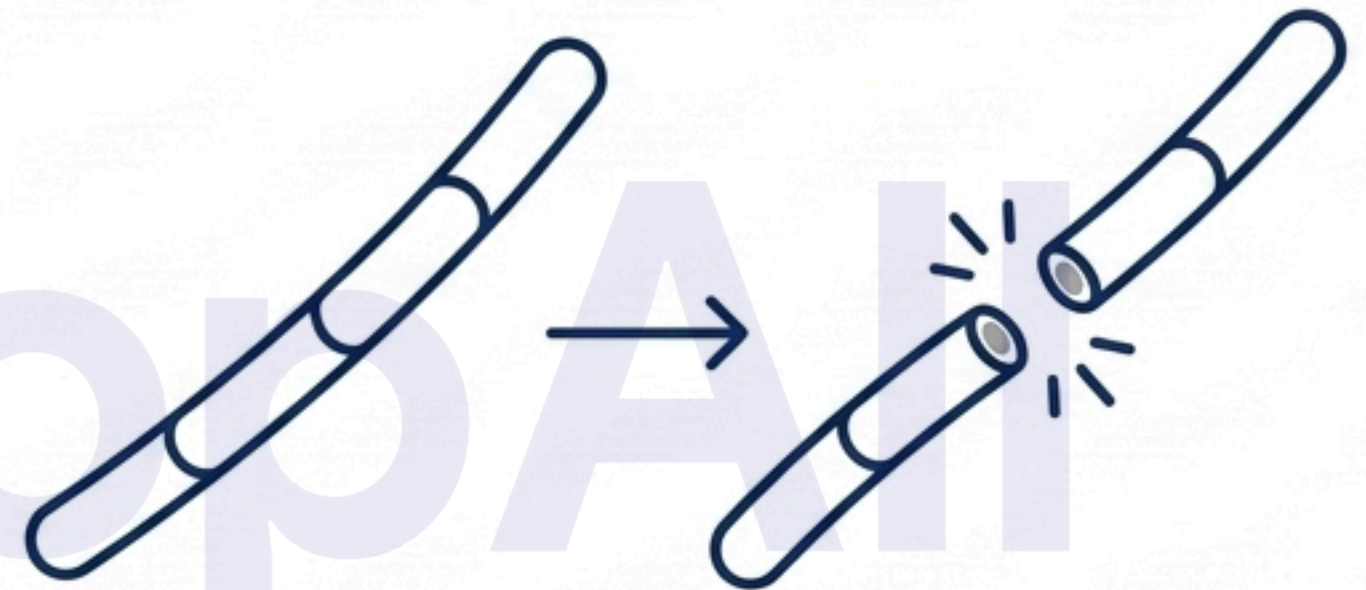
The Reproductive Paradox

ALERT: ABSENT



Asexual spores are generally NOT found in Basidiomycetes.

PRIMARY MECHANISM



Vegetative reproduction occurs dominantly via fragmentation.

Fragmentation



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Let's Test Them Now.**

$$E=mc^2$$



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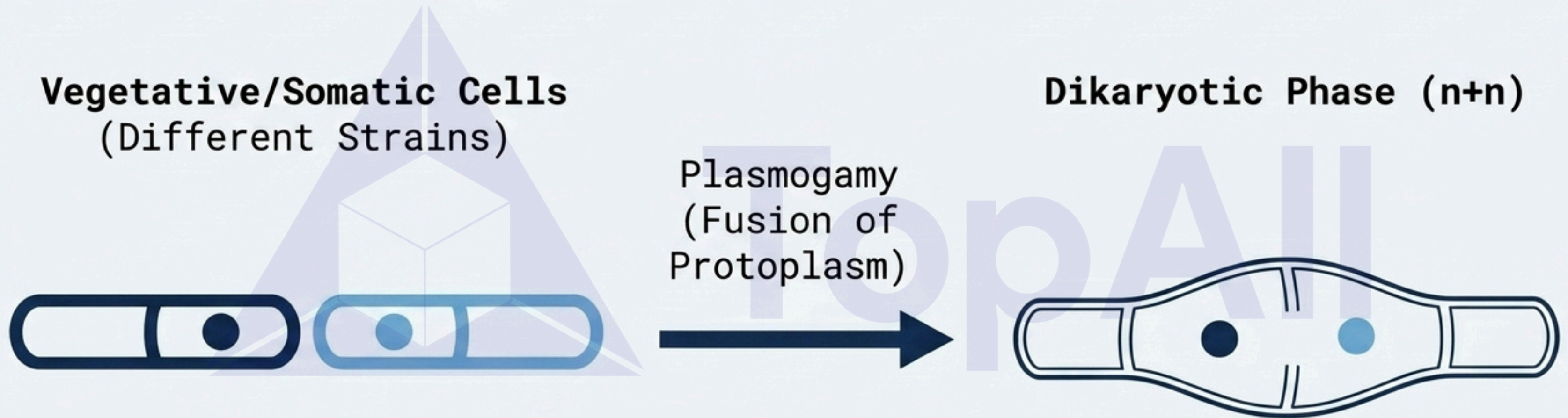
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Sexual Reproduction I: Somatic Fusion

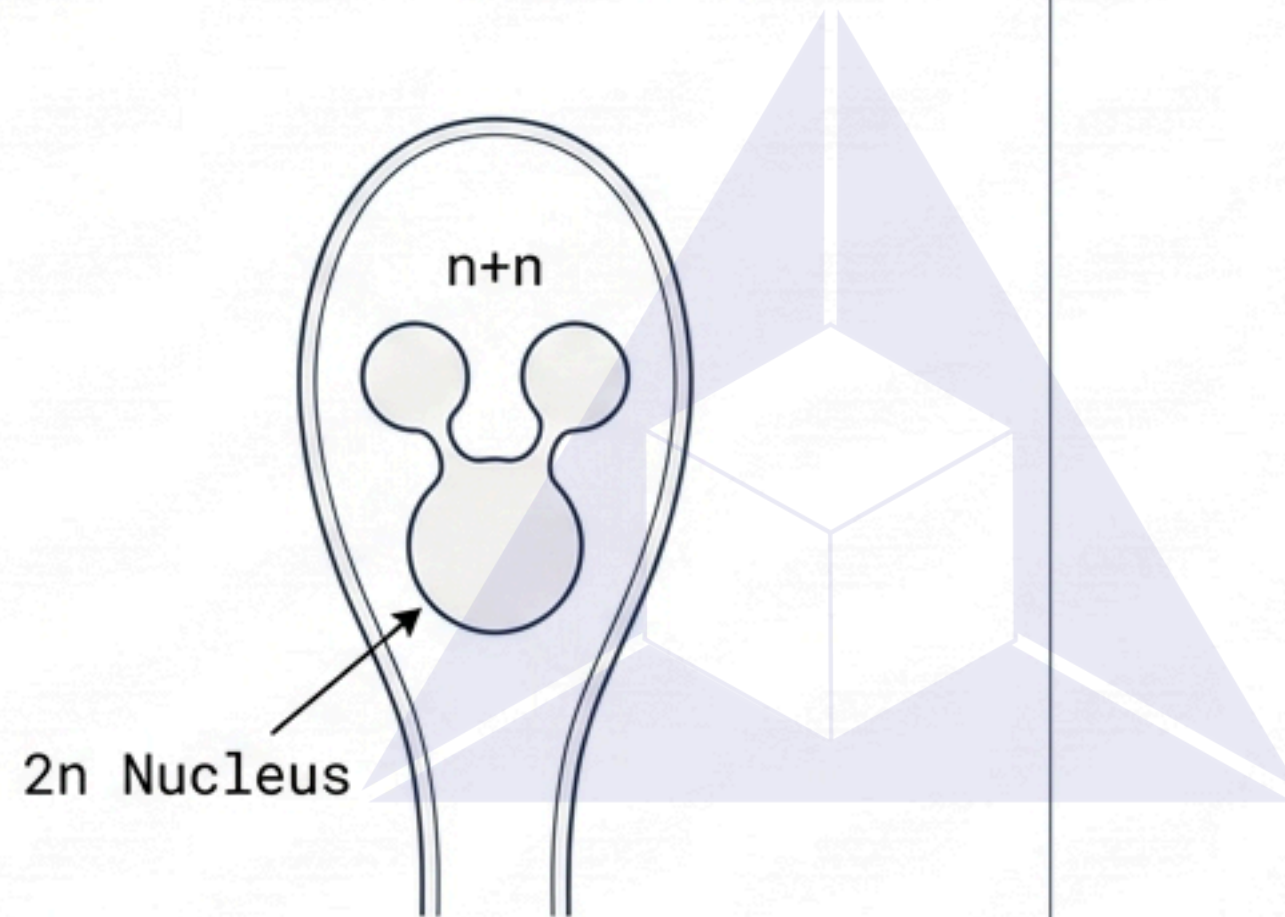
Note: True sex organs are ABSENT in this class.



This dikaryotic structure ultimately gives rise to the **basidium**.

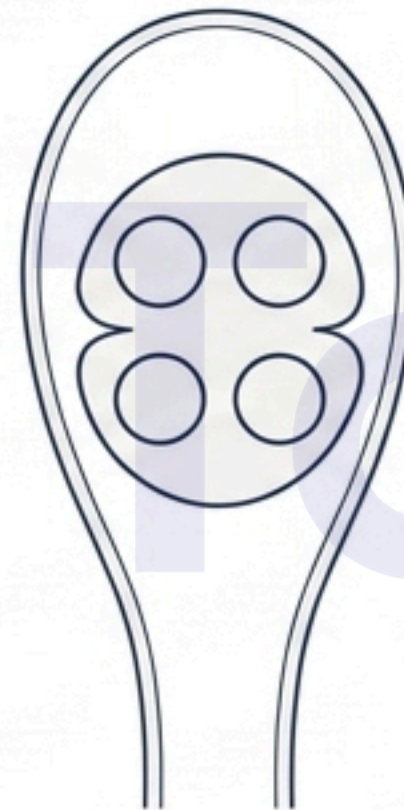
Sexual Reproduction II: The Basidium Factory

1. Karyogamy



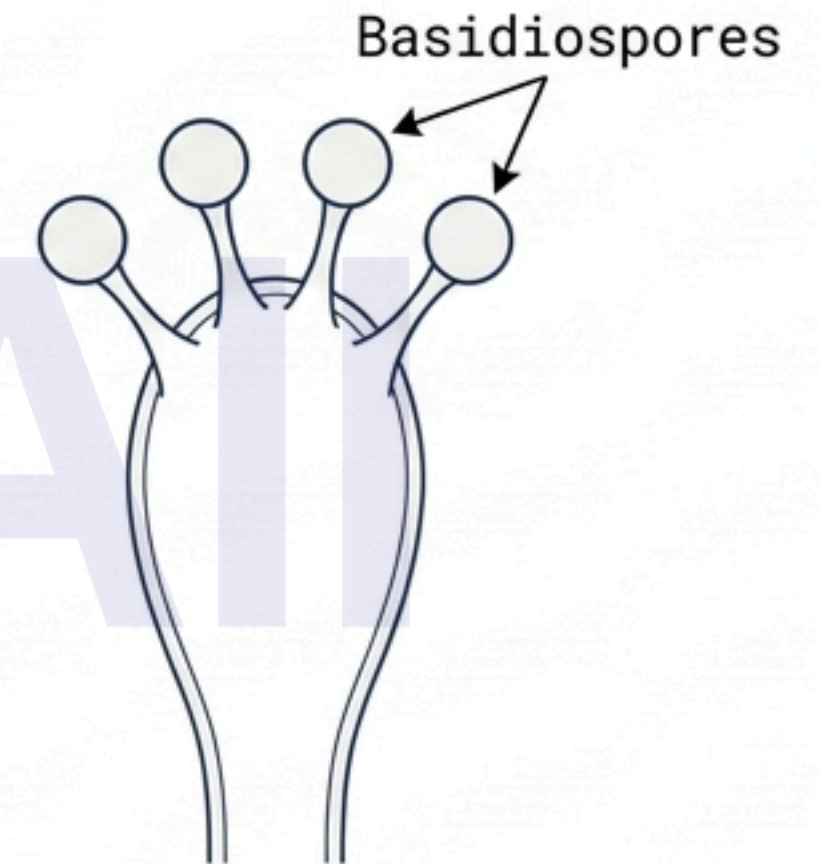
Karyogamy occurs, forming a diploid nucleus.

2. Meiosis



Meiosis (reduction division) takes place inside the basidium.

3. Spore Formation



Four haploid basidiospores are formed.

CRITICAL EXAM FACT: Basidiospores are produced **EXOGENOUSLY** (on the outside).

Key Specimens & Clinical Examples

Agaricus



The common edible mushroom.

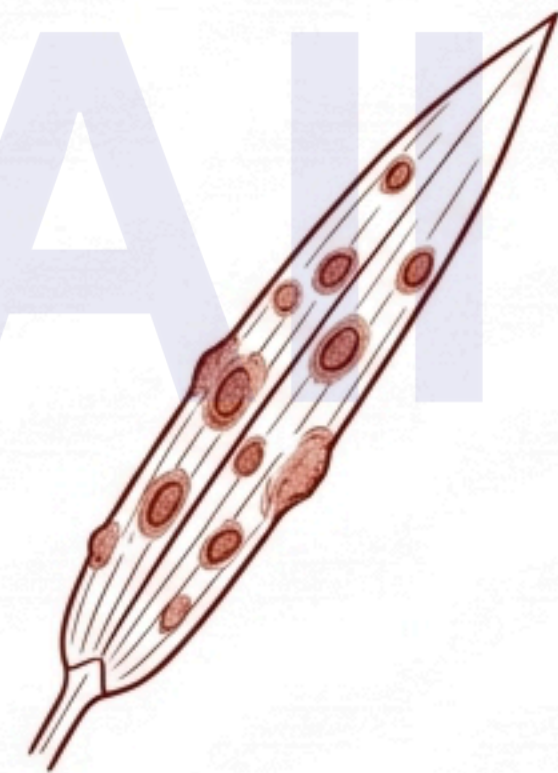
DISEASE: SMUT

Ustilago



DISEASE: RUST

Puccinia



Wheat rust-causing fungus.

Basidiomycetes Diagnostic Matrix

NEET High-Yield Summary

Feature	Diagnostic Characteristic
Mycelium	Branched and Septate
Asexual Spores	Absent (reproduces vegetatively via fragmentation)
Sex Organs	Absent (plasmogamy via somatic cell fusion)
Sexual Spores	4 Basidiospores (produced exogenously)
Fruiting Body	Basidiocarp
Key Genera	<i>Agaricus</i> (Mushroom), <i>Ustilago</i> (Smut), <i>Puccinia</i> (Rust)



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