



**Phylum Basidiomycota (e.g. mushrooms):** about 25,000 terrestrial species with septate hyphae. During sexual reproduction, basidiomycetes produce haploid dikaryotic basidia (club-like structures) on the gills of the basidiocarp (the mushroom - stem + cap). The nuclei of the basidia fuse to form a zygote that then undergoes meiosis to form basidiospores which are released into the environment and germinate under favorable conditions to form a haploid mycelium underground. When a mycelium of opposite mating types encounter one another, they fuse their hyphae to form a basidiocarp that emerges from the ground.

