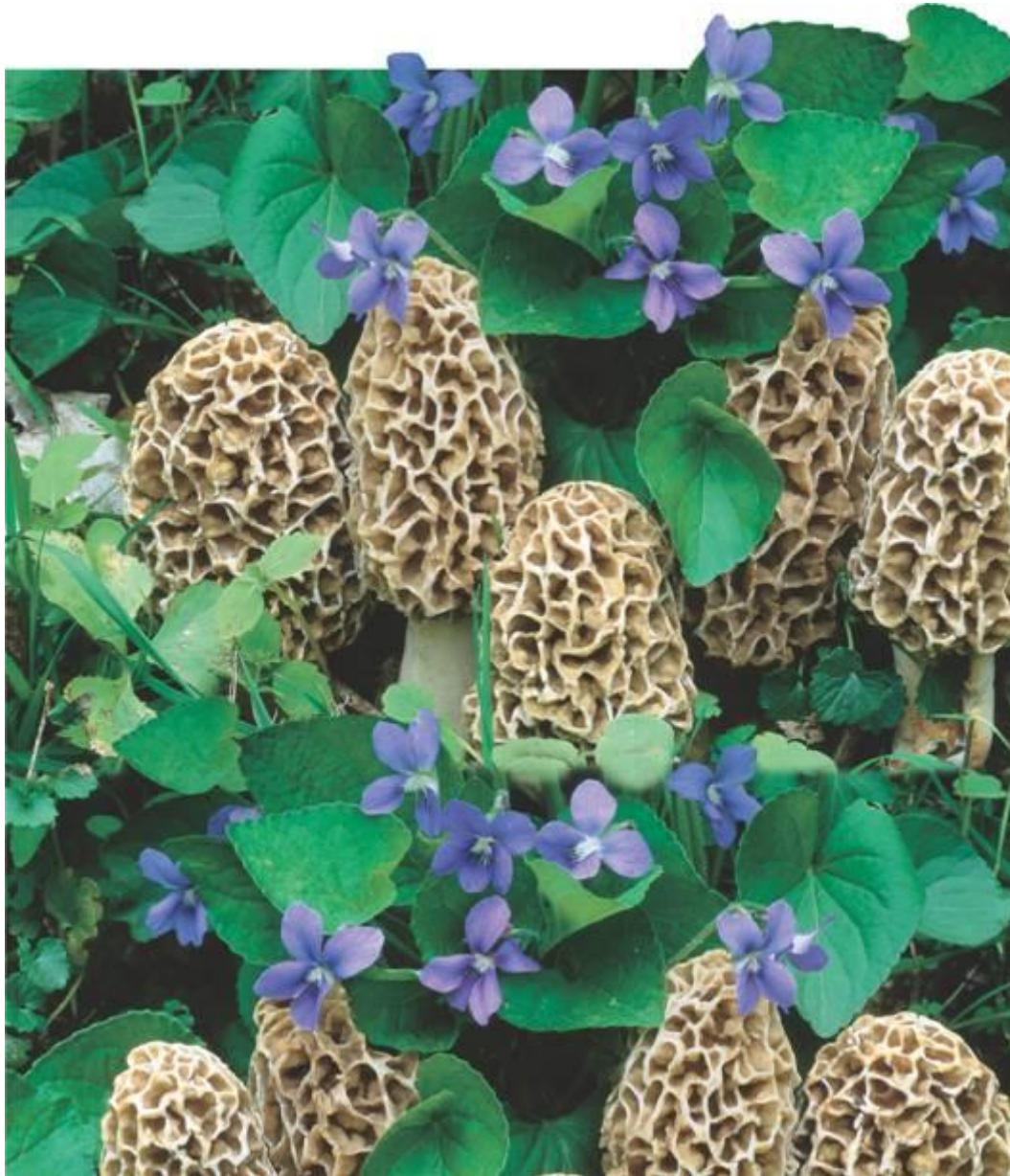


21-1 The Kingdom Fungi



What Are Fungi?



What are the defining characteristics of fungi?



Fungi are eukaryotic heterotrophs that have cell walls.

Their cell walls contain **chitin**, a complex carbohydrate.

Fungi depend on other organisms for food. They digest food outside of their bodies and then absorb it.

Some fungi absorb nutrients from decaying matter in the soil.

Other fungi are parasites, absorbing nutrients from their hosts.

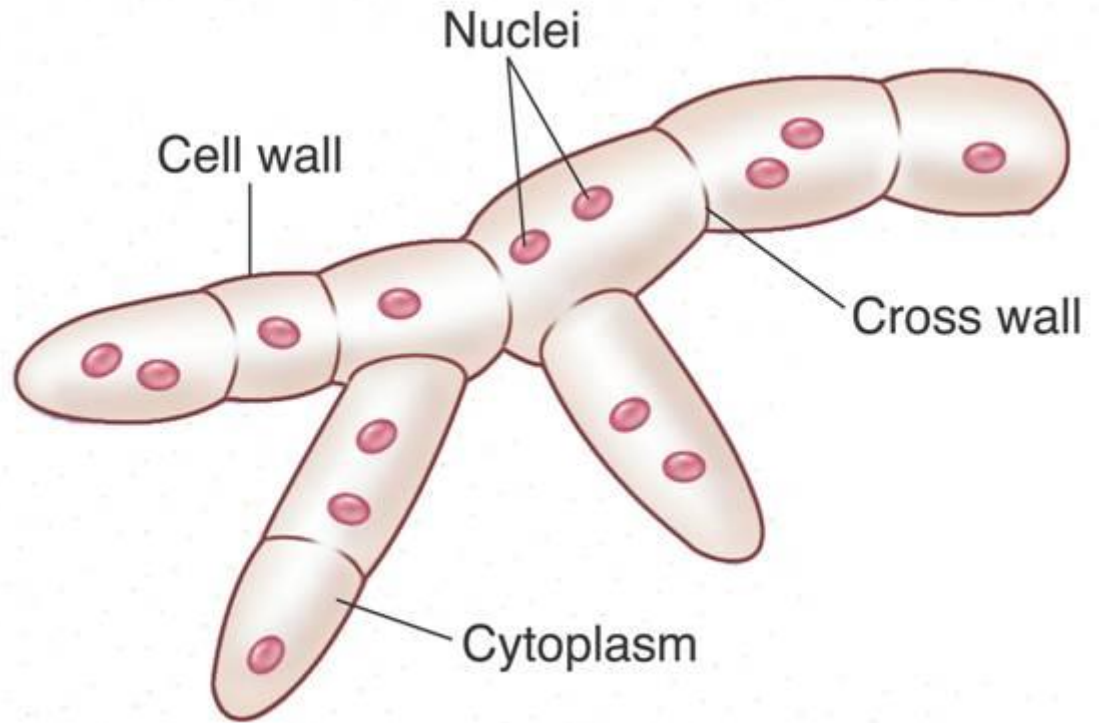
Structure and Function of Fungi

Except for yeasts, all fungi are multicellular.

Fungi are made up of thin filaments called **hyphae**. Each hypha is only one cell thick.

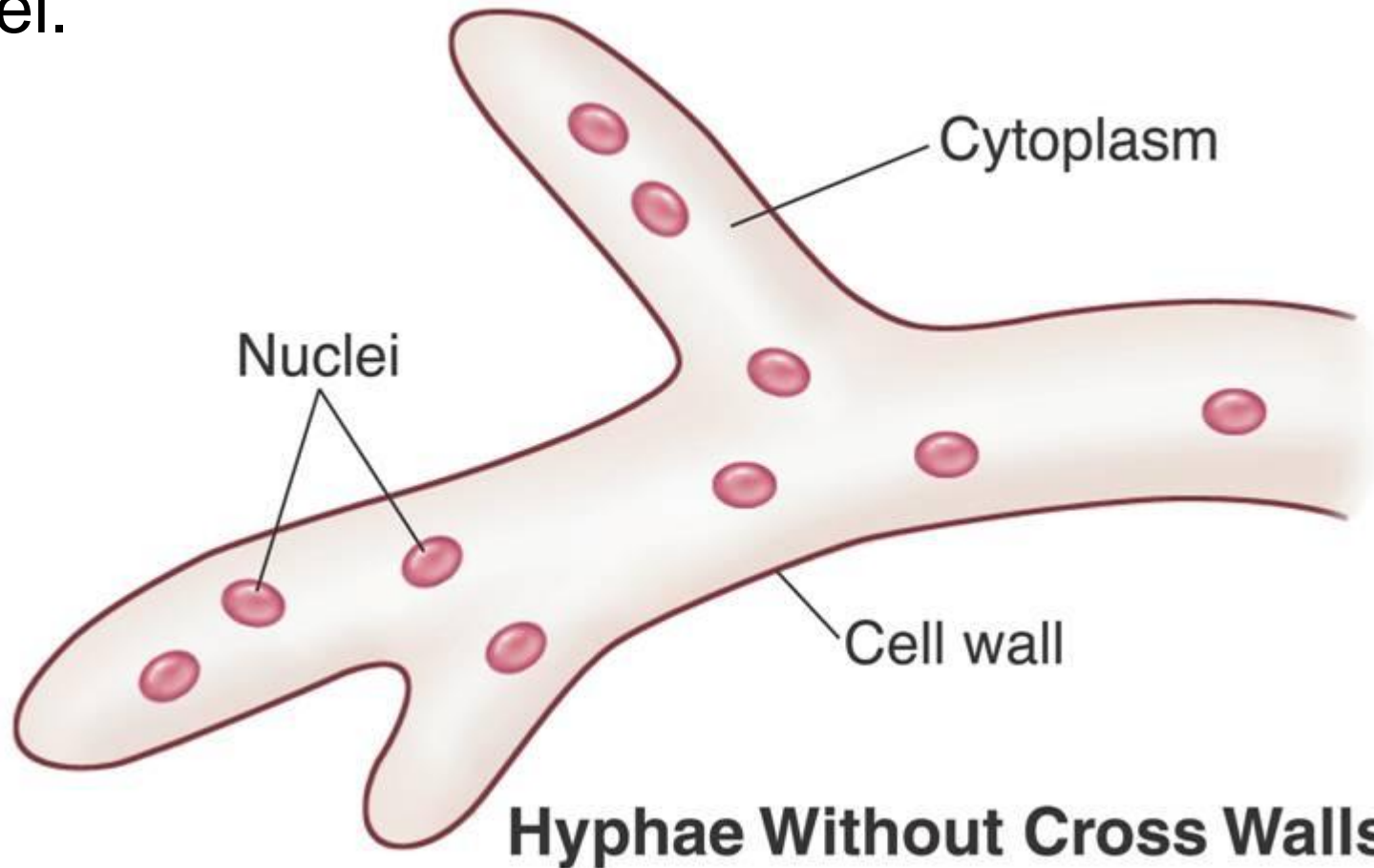
In some fungi, cross walls divide hyphae into cells with 1 or 2 nuclei.

In the cross walls, there are openings through which the cytoplasm and nuclei can move.



Hyphae With Cross Walls

Some hyphae lack cross walls and contain many nuclei.



Hyphae Without Cross Walls



What is the internal structure of a fungus?

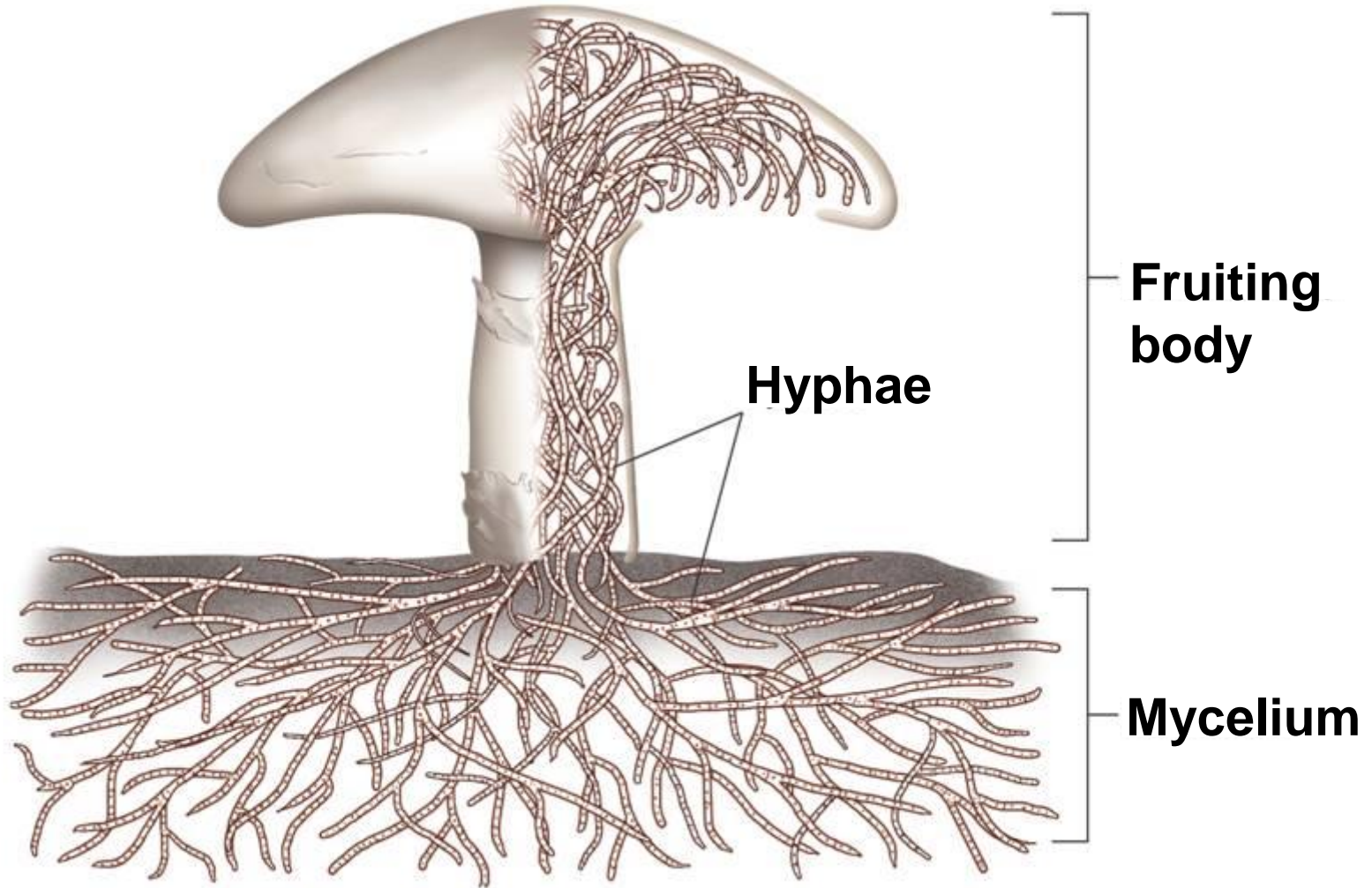
Fungus Structure



The bodies of multicellular fungi are composed of many hyphae tangled together into a thick mass called a mycelium.

The **mycelium** permits a large surface area to come in contact with the food source through which it grows.

Structure of a Typical Fungus



A mushroom is the fruiting body of a fungus.

A **fruiting body** is a reproductive structure growing from the mycelium in the soil beneath it.

Reproduction in Fungi



How do fungi reproduce?



Most fungi reproduce both asexually and sexually.

Asexual reproduction occurs when hyphae break off and begin to grow on their own.

Some fungi produce spores, which scatter and grow. In some fungi, spores are produced in structures called **sporangia**.

Sporangia are at tips of specialized hyphae called **sporangiophores**.

Sexual reproduction involves two mating types: “+” (plus) and “−” (minus).

Hyphae of opposite mating types meet and fuse, bringing “+” and “−” nuclei together in one cell.

After growth and development, the nuclei form a diploid zygote nucleus.

The zygote enters meiosis and produces haploid spores.

These spores are capable of growing into new organisms.

How Fungi Spread

Many fungi produce dry spores that scatter easily in the wind.

If these spores are to germinate, they must land in an environment with the proper combination of temperature, moisture, and food so they can grow.

Other fungi are specialized to lure animals, which disperse spores over long distances.

21-1 Section QUIZ

Continue to:

Section QUIZ

- or -

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21-1 Section QUIZ

1 The cell walls of fungi are made up of

A a. chitin.

b. hyphae.

c. mycelium.

d. cellulose.

21-1 Section QUIZ

2 The part of the mushroom that appears above ground is the

- a. mycelium, or main body of the fungus.
- b. photosynthetic organ of the fungus.

A c. reproductive structure of the fungus.

- d. structure used to capture prey.

21-1 Section QUIZ

- 3** The hyphae that make up multicellular fungi are
- a. long chains that are several cells thick.
 - A** b. thin filaments that are sometimes divided into cells.
 - c. the fruiting bodies used in reproduction.
 - d. the structures that grow above ground.

21-1 Section QUIZ

- 4 Most fungi reproduce
- a. sexually.
 - b. asexually.
 - A** c. both sexually and asexually.
 - d. neither sexually or asexually.

21-1 Section QUIZ

- 5** Sporangia are found at the tips of specialized hyphae called
- a. gametangia.
 - b. mycelia.
 - A** c. sporangiophores.
 - d. sporophytes.

END OF SECTION