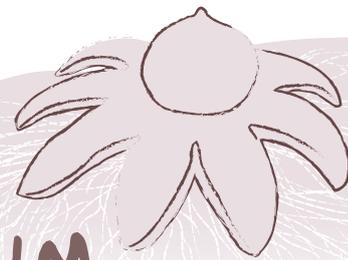


DABAS KONCERTZĀLE 2020.

ZEMESZVAIGZNE

GEASTRUM



It's not just a network

Inita Daniele, mycologist

Mycorrhiza is a mutually symbiotic relationship between fungi and the roots of plants. A friendship, cooperation, or assistance?

80-95% of all plants are part of mycorrhizae – trees, shrubs, herbs, also moss, creepers and ferns. Only a small amount of plants can do without the help of fungi! Is it so?

Fungi get carbon and carbohydrates from plants, while plants better absorb nutrients – minerals and water as a result.

There are two main types of mycorrhiza.

Ectomycorrhiza

Fungal hyphae wrap around the root and form a dense sheath. They burrow between the cells of the root's outer layer, without penetrating the cells themselves. The root buds die and the nutrient supply functions are performed by the fungal external hyphae. The sheath separates the root from the soil. It accumulates nutrients.

Ectomycorrhiza is formed mainly with cap mushrooms. The plants with which ectomycorrhiza is most often formed is woody plants. For example, the

porcini mushroom is a spruce mycorrhizal fungus.

External hyphae form an extensive mycelial network in the soil and among fallen leaves thereby mineralizing organic litter.

Endomycorrhiza

Fungal hyphae penetrate the cells of the plant's roots. Hyphae also penetrate between the cells of the root's outler layer, forming a complex intercellular system called the Hartig net. Endomycorrhiza are formed by microscopic fungi living in the soil. Plants that form endomycorrhiza represent almost all plant genera, even moss (liverworts and bog groove-moss).

Mycorrhizal sheaths protect plants from pathogens present in the soil.

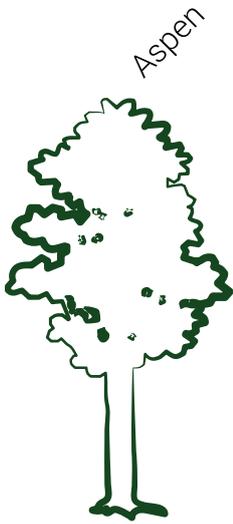
Fungal hyphae can connect several plants in one hyphae network and transfer nutrients from one plant to another.

It is a peculiar kind of web (internet), with the help of which plants communicate – report to each other about pests, diseases, lack of nutrients. With this information, trees and other plants that are far apart can prepare for adverse conditions in a timely manner.

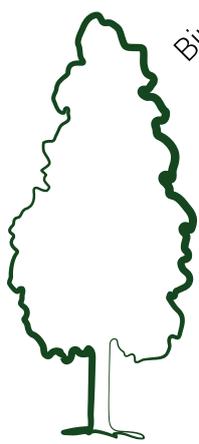


Tree root tips with ectomycorrhizal sheaths. Photo: Diāna Meiere

Each of these fungi forms a mycorrhiza with one of the trees. Draw these specific links.



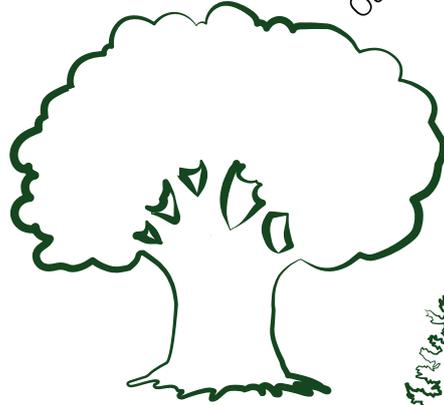
Aspen



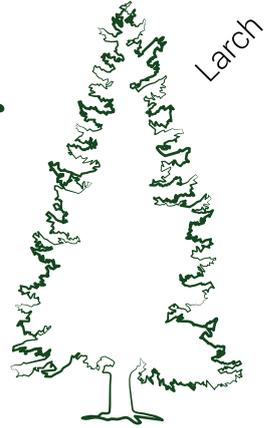
Birch



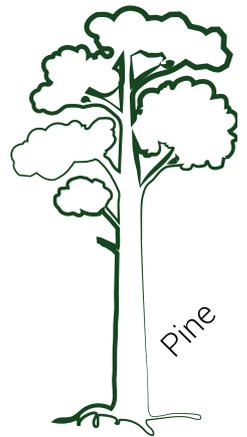
Spruce



Oak



Larch



Pine



Golden Chanterelle



Velvet Bolete



Birch Bolete



Fly Agaric



Penny Bun



Milk Cap



Larch Bolete

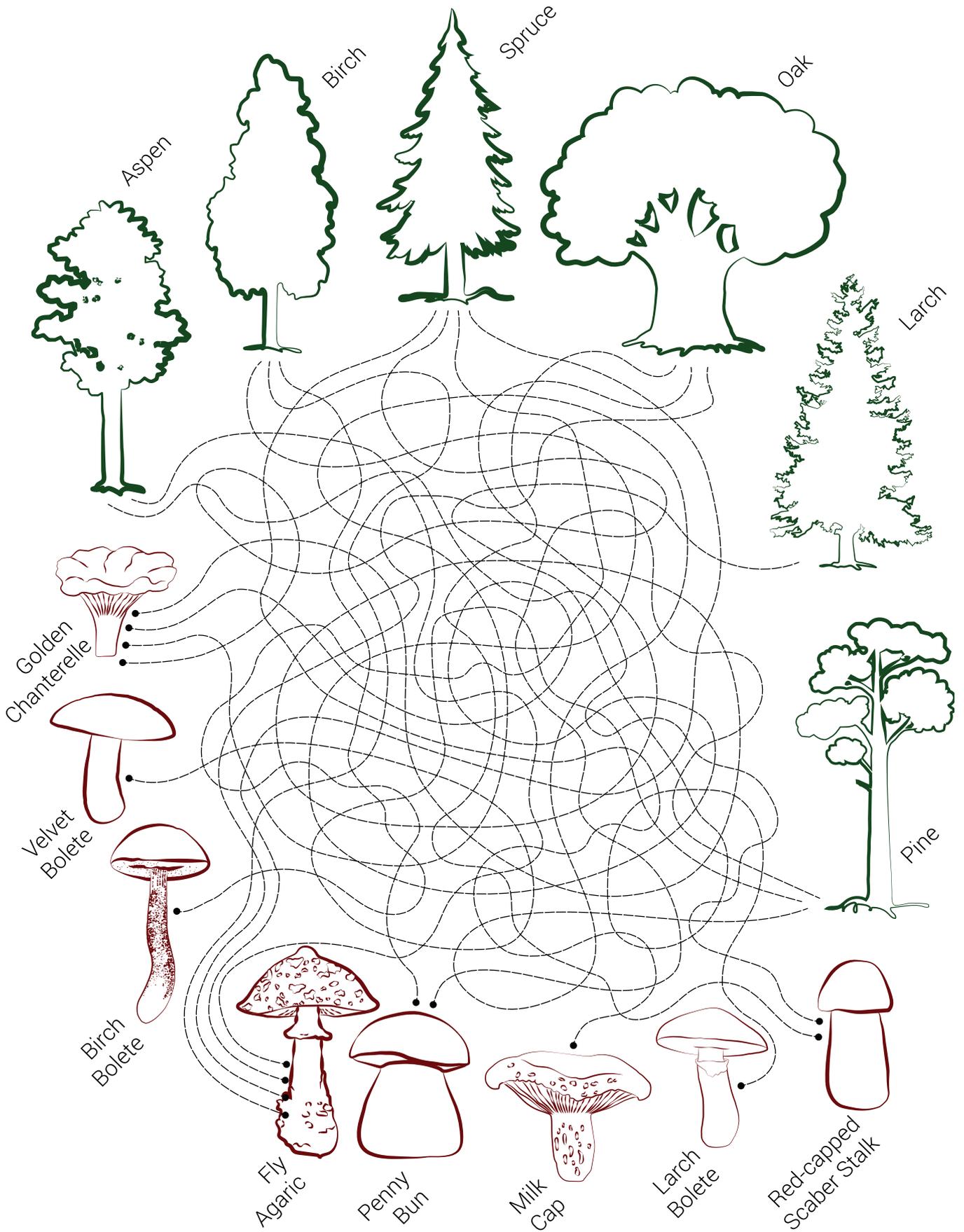


Red-capped Scaber Stalk

Drawing: Andris Soms



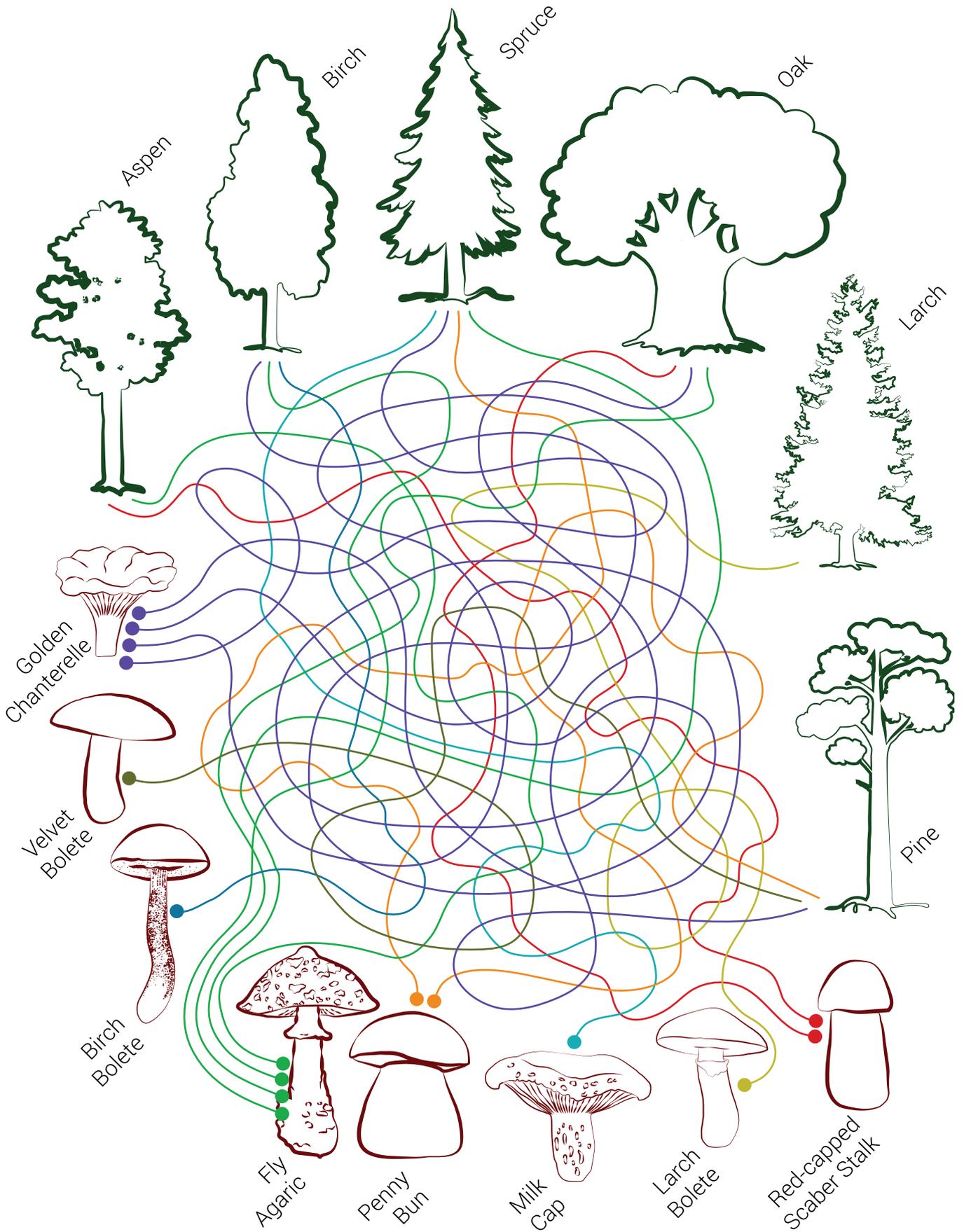
Each of these fungi forms a mycorrhiza with one of the trees. Find these specific links.



Drawing: Andris Soms



The answer



Drawing: Andris Soms

