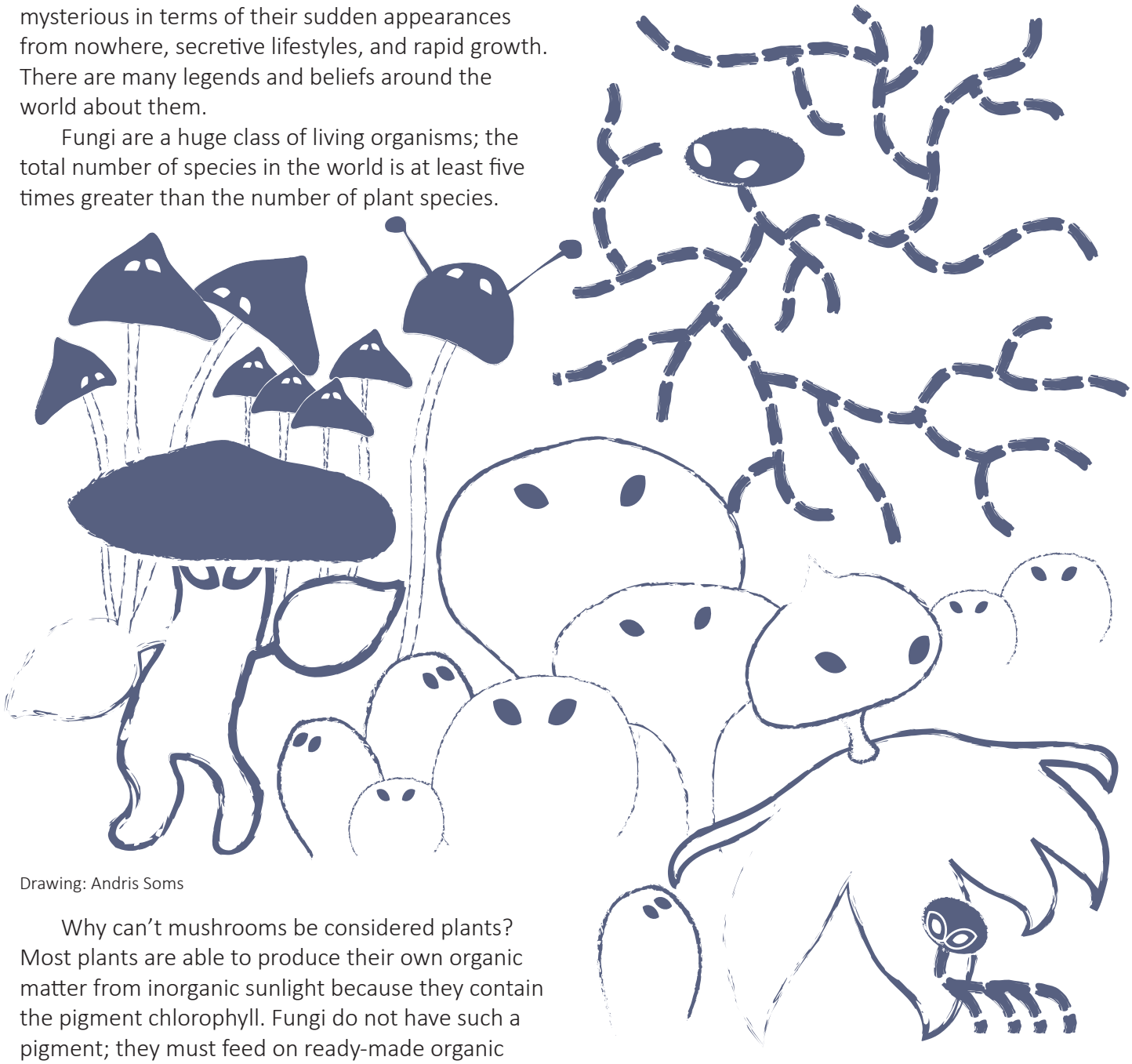
Are fungi plants or animals?

Inita Daniele, mycologist

This question has occupied people's minds for centuries. Fungi have always seemed unusual, mysterious in terms of their sudden appearances from nowhere, secretive lifestyles, and rapid growth. There are many legends and beliefs around the world about them.

Fungi are a huge class of living organisms; the total number of species in the world is at least five times greater than the number of plant species.



Drawing: Andris Soms

Why can't mushrooms be considered plants? Most plants are able to produce their own organic matter from inorganic sunlight because they contain the pigment chlorophyll. Fungi do not have such a pigment; they must feed on ready-made organic matter. The structure of cell membranes (chitin as insects, not cellulose as plants) and the accumulation of nutrients (glycogen as animals, not starch as plants) lend fungi closer to the animal kingdom.

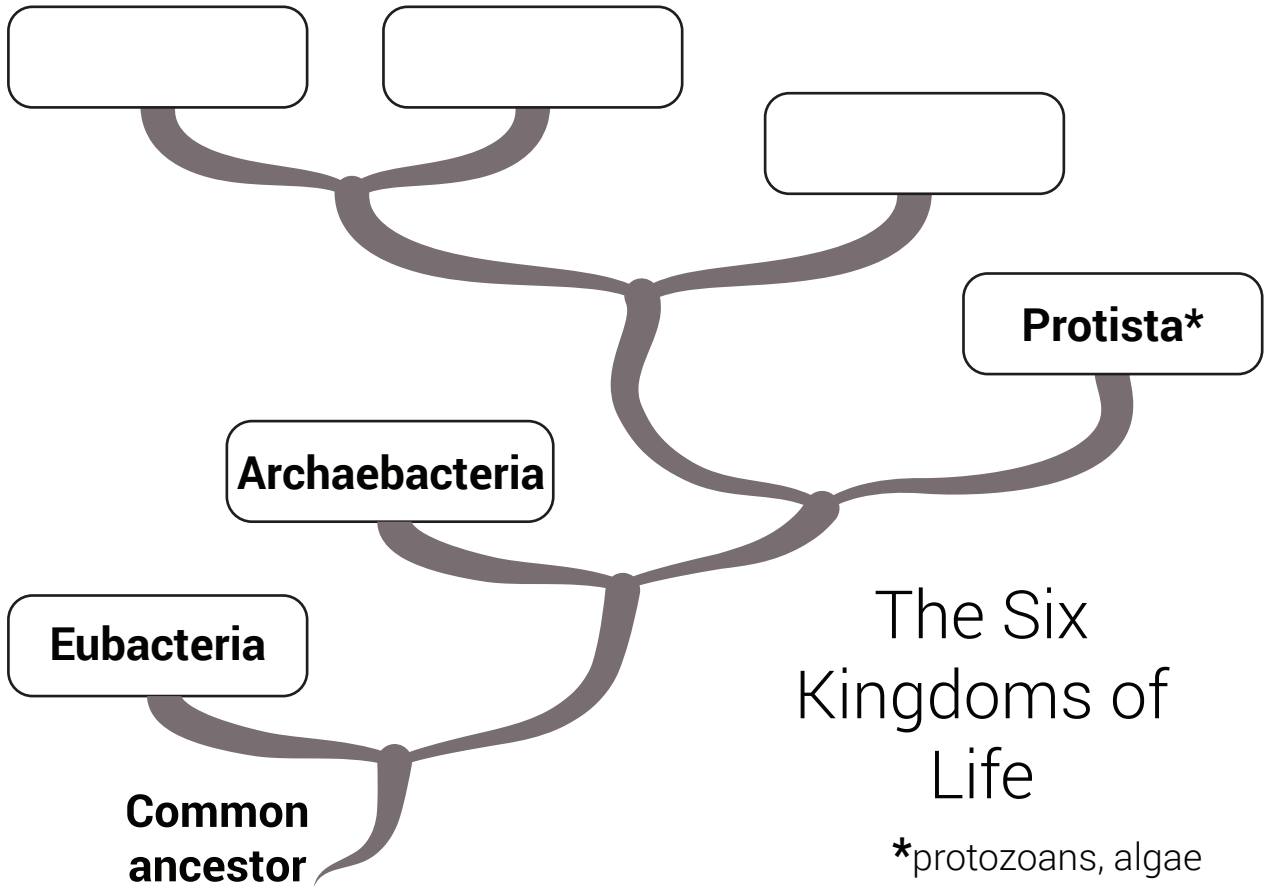
Maybe mushrooms are animals? No, because fungi are unable to move at any stage of their development and have no sensory systems – no nerves, no heart, no eyes or ears.

Thus, fungi are in a class of their own. They have their own category. But with what do they have the closest ties when you look at the evolutionary tree of life?

Investigate the facts summarized in the table. In each of the columns, outline or colour in the features that fungi have in common with plants or animals.

Kingdom	Characteristic					
	Feeding	**Cell membranes contain**	**Chlorophyll**	**Accumulation of reserve nutrients**	**Ability to move**	**Highly developed sensory organs**
Fungi	Use ready-made organic substances	Chitin	No	Glycogen	No	No
Plants	Form organic matter from inorganic sunlight	Cellulose	Yes	Starch	No	No
Animals	Use ready-made organic substances	Chitin (isects)	No	Glycogen	Yes	Yes

Using the results of the table, decide which of the empty pods should contain fungi, which plants and which animals. Take this into account. The greater the number of common features, the closer the affiliation and the closer the worlds are to each other in the evolutionary tree.

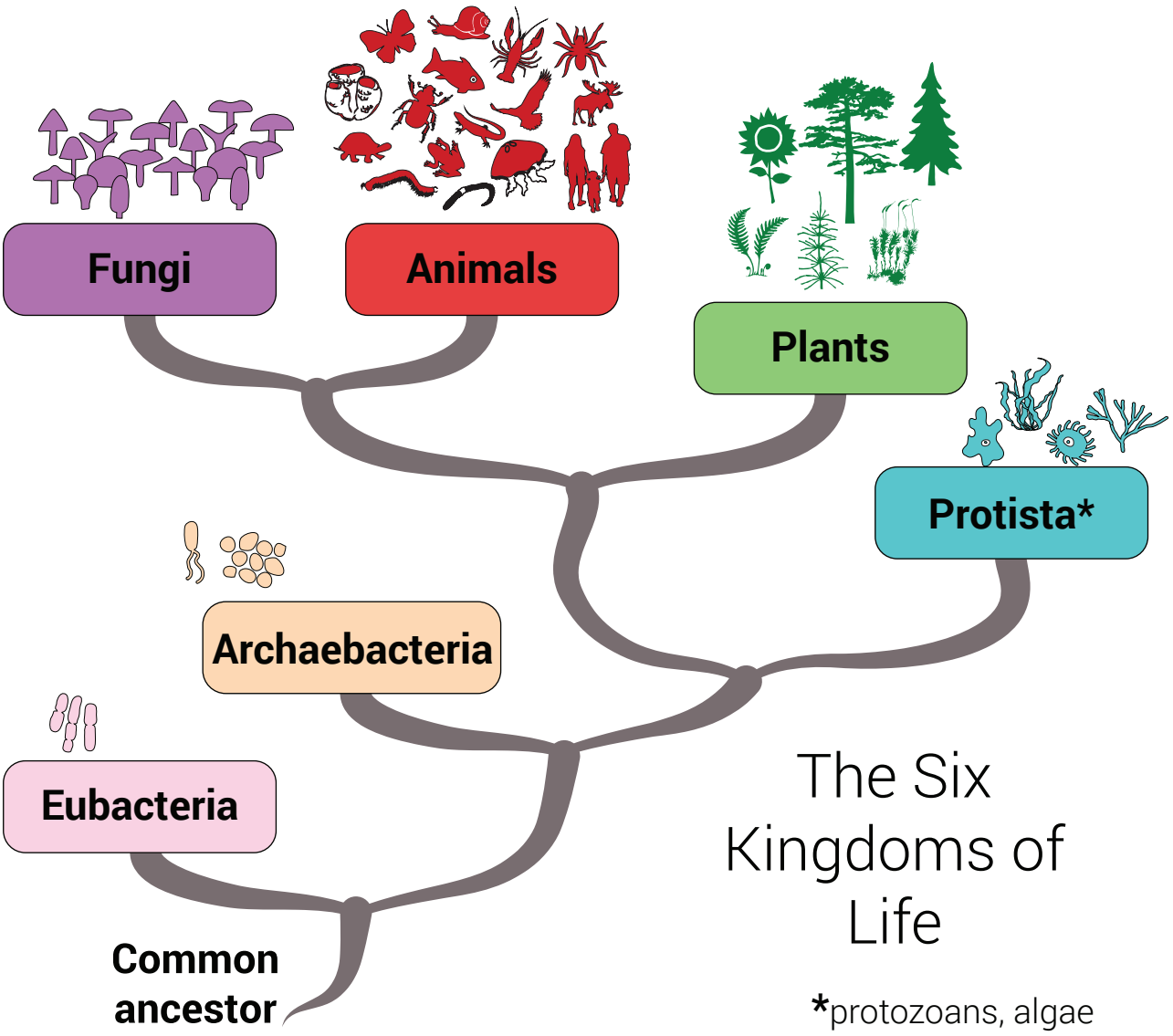


The simplified phylogenetic tree of life. Drawing: Andris Soms

Latvijas vides aizsardzības fonds
Biedrība Dabas koncertzāle
Dabas aizsardzības pārvalde
Valkas novads
www.dabaskoncertzale.lv
www.daba.gov.lv
Materiāls tapis ar Latvijas vides aizsardzības fonda atbalstu

ANSWERS

Kingdom	Characteristic					
	Feeding	**Cell membranes contain**	**Chlorophyll**	**Accumulation of reserve nutrients**	**Ability to move**	**Highly developed sensory organs**
Fungi	Use ready-made organic substances	Chitin	No	Glycogen	No	No
Plants	Form organic matter from inorganic sunlight	Cellulose	Yes	Starch	No	No
Animals	Use ready-made organic substances	Chitin (isects)	No	Glycogen	Yes	Yes



The simplified phylogenetic tree of life. Drawing: Andris Soms

Latvijas vides aizsardzības fonds
Biedrība Dabas koncertzāle
Dabas aizsardzības pārvalde
Valkas novads
www.dabaskoncertzale.lv
www.daba.gov.lv
Materiāls tapis ar Latvijas vides aizsardzības fonda atbalstu