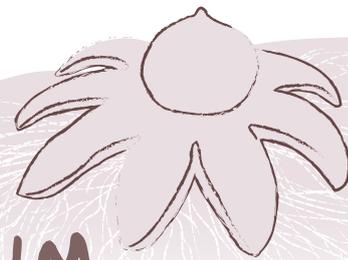


DABAS KONCERTZĀLE 2020.

# ZEMESZVAIGZNE

GEASTRUM



## *Geastrum* (Earthstar)

Inita Dāniele un Diāna Meiere,  
mycologists

The Earthstar is also a puffball ...

The close relationship among puffballs is most evident in the last stage of their development, when ripe spores can be easily attracted from the ripe fruit body – a small tap of the finger will release a cloud of spores.

But it all starts with a mycelium that grows invisible to our eyes in the ground from fallen leaves and stems. At some point a small clump forms on the fungus and from that – a bulb-like tuber with

a pointed tip grows. After a while, the outer layer cracks and begins to bend, creating “rays” from the inner layer. These rays lean so far out of some earthstars that they lift the small spore bulb up.

Several species of earthstars can be found in the forests, meadows, parks and greenery of Latvia, and some even quite frequently. Spotting them, though, is not easy. To distinguish one species from another, one must look carefully – for some species the small pyramid through which the spores are sown (scientists call it peristome) is ribbed, for others a smooth, spore tuber may have a short or relatively long stalk. Some are only a few cm large; others can be larger than 10-12 cm. All earthstar species, except the fringed earthstar, are protected in Latvia.



Photo: Andris Soms

Fungi are everywhere and therefore play an important role in sustaining life and preserving biodiversity.

- There is no waste in nature. All natural things that have ceased to exist – dry leaves, fallen needles & trees and dead organisms – all break down into minerals thanks to fungi, turning into humus-rich soil. Fungi has the power to break down even certain types of plastic and absorb radioactive contamination.
- Fungi have no days off. They recycle 24/7, 365 days a year and even when temperatures drop below zero. They themselves generate heat.
- Fungi are the best foresters. However, they do not “cut” the forest, but help it to regenerate it. Old trees die over time, forming fallows. Fungi are the only ones that can break down wood with the help of enzymes, thus maintaining the natural life cycle of the forest.
- The symbiotic relationship between fungi and plants forms the most efficient natural transport network or mycorrhiza possible. The benefits are mutual. Plants provide fungi with energy in the form of sugars. In exchange, fungi supply plants with water, phosphorus and nitrogen through huge underground networks, even under the driest conditions.
- This network maintained by fungi also serves to exchange information. Through chemicals, plants transmit and receive information about both potential hazards and favourable conditions.
- Fungi feed on countless other living organisms.
- There are fungi that can be used as a natural weed and pest control agent in place of artificial chemicals.
- Scientists have found that some species of fungi are effective in attracting water. If it is possible to discover a way in which these fungi can be cultivated, this will help ensure the survival of plants in drought conditions. In the context of climate change, this could become even more important.
- Penicillin is the most well-known medicine coming from fungi, although the use of fungi in modern medicine is much broader.

Fungi provide us with a huge amount of eco-services. We don't even know anything about some fungi. Therefore, the least we can do for fungi, wherever possible, is to reduce excessive land use in all things and places:

- to preserve and maintain old parks;
- not to fertilize lawns with mineral fertilizers, as this reduces the diversity of fungi;
- to sow more local plant species adapted to local geographical and climatic conditions, ensuring a wider variety of both plants and, consequently, also fungi;
- not to create plant monocultures in forests or meadows to preserve calcareous grass bogs keeping them from drying out;
- minimize damage to the forest ground as much as possible when felling trees in the forest;
- not to build in dune areas;
- preserve old fallen trees in forests.

These are just some of the possible answers to the question “Why should we take care about fungi?”. There are many other possibilities that everyone can discover.

