The Fungal Kingdom

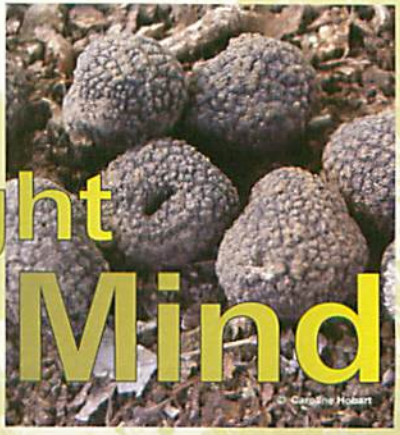
We are usually only aware of fungi when they produce their fruit bodies, but they exist as vast networks of threads (mycelium), that ramify within substrates such as soil and wood in their search for food.
Unable to make their own food some fungi (decomposers) break down dead organic matter; in this process they release nutrients, contribute to the formation of rich humus and improve soil quality, enabling plants to grow successfully.

Fungi that feed on dead tissues are the garbage disposal agents of the natural world

Fungi underpin life

Other fungi are linked to the roots of plants and obtain water and nutrients for the plant. In return the fungus gets up to 20% of the sugars made by the plant during photosynthesis. 85% of all plant species use this (mycorrhizal) partnership to obtain their nutrients.

Lots of plants use truffle species as their mycorrhizal partner to help obtain their nutrients.



Out of Sight
Out of Mind

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Is Climate Change Affecting Our English Oak?

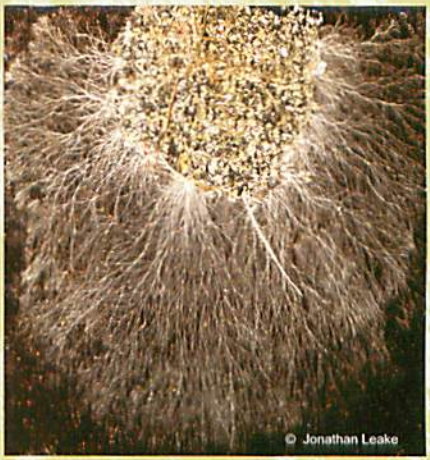
Changing weather patterns are affecting Fungi

Fungi provide essential ecosystem services through decomposition, nutrient cycling, and soil improvement, so change in their behaviour could significantly alter plant growth.
Recent work has shown that the fungal fruiting season in autumn now begins much earlier and lasts much longer than it did 30 years ago. Also some fungi now fruit in the spring as well as the autumn. This indicates that fungal activity is changing.
The fruiting patterns of fungi associated with the roots of deciduous trees is now different to that of coniferous trees. Climate change has clearly brought about these differences and is affecting the decomposition of organic matter and plant mycorrhizal partners, combined with the emergence of new fungal diseases, **Oak trees may be Vulnerable**

Some alien fungal species are now more common in Britain
We know that changing weather patterns in the Mediterranean area has affected the yield of hypogeous fungal fruit bodies (Truffles). Very dry weather is not conducive to their fruiting. Warmer weather and milder winters have made regions further north better suited to truffle cultivation. Oak trees inoculated with truffle mycelium are now being planted in Britain.
Significantly more hypogeous fungi are now seen in England than in the past. There are approximately 80 species, but most are minute and some are poisonous to humans.

Oaks support the widest variety of animal species of all native British trees, so losses would impact on a huge range of invertebrate and vertebrate species and probably affect the surrounding landscape.

Fungal mycelium (below) is out of sight, they support this tree and most plants, can they adapt to Climate Change quickly enough? **Make sure that fungi are not out of your mind.**



Oaks rely on fungi for their mineral nutrients