

## FUNGI IN SCHOOLS

for  
CHILDREN  
TEACHERS  
PARENTS

and other  
interested parties



### THE TAR-SPOT FUNGUS

The tar-spot fungus (*Rhytisma acerinum*) causes conspicuous black spots, about 1cm across, on living leaves of sycamore trees (*Acer pseudoplatanus*). You may have noticed trees with these spotted leaves in the late summer and autumn. The leaves (and their black spots) fall from the trees in the autumn and lie overwinter on the ground. Look under a tree in April or May and these black spots are not too difficult to find where the fallen leaves have been left undisturbed; it is no good looking in a tidy garden or a park where old leaves are swept away and only too often put on a bonfire. The black spots are now thicker than they were in the autumn and no longer shine. The upper surface has small raised ridges and looks rather wrinkled. Keep a few of these black spots in a cool place on damp paper in a covered dish — a small box of clear plastic is good as you can then see what is happening. The wrinkling becomes more obvious and finally the tops of the ridges split open. Narrow needle-shaped spores escape from these cracks. You will not be able to see single spores but, with luck, you may see a lot of spores leaving the cracks as a 'puff'. This will only happen the first time you take the lid off the box — so watch carefully! If you are patient you can replace the lid and wait, perhaps 24h, for another crop of spores to develop and puff away. The spores are only puffed a very short distance of a mm and are then carried toward the young developing sycamore leaves by air currents. Each spore has a tiny dot of mucilage at one end which helps it to stick onto a leaf. The spore germinates and a small tube penetrates the underside of the leaf. The fungus grows inside the leaf and eventually forms the black spot that looks so conspicuous later in the year.

In the east of the Netherlands, where I live, there are sycamore trees (Esdoorn — in Dutch) but there are no tar-spots on the leaves. If you live near a big city you may also have difficulty in finding the black spots. This is because of high levels of sulphur dioxide in the air which prevent the growth of the fungus. The presence, or absence, of the tar-spot fungus is sometimes used as an indicator for this type of pollution.

The two small figures show (a) the black tar-spots on a sycamore leaf in the autumn and (b) the black spots splitting open in the spring. Finally, if you have not been able to see a puff of spores, and it is not all that easy with the tar-spot fungus, there is a Cup Fungus with a guaranteed puff where the spores come from little sacs with hinged lids — but that is another story.

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Fig (a) Sycamore leaf on the tree in autumn.

Fig (b) Sycamore leaf on the ground in spring.

Figures by Prof. J. Webster