45	2010	
45	83	PATH

Arboriculture Research Note 45

Issued by the Arboricultural Advisory & Information Service

COBWEB FUNGUS – *ATHELIA,* by D.R. Rose

Summary

The cobweb fungus (*Athelia* sp.) is found growing on the bark of a wide range of trees where it forms white, circular, cobweb-like growths varying from a few centimetres to over twenty centimetres in diameter. The fungus causes no damage to the tree as it is a parasite of the algae and lichens growing on the bark.

Description

1. While in active growth on trees the Cobweb fungus is very striking and resembles a leprous disease. It appears initially as delicate snow-white, circular cobweb-like patches on the bark of trees but also on lichen covered wooden fences and other wooden artefacts. Later the growths often take on a tinge of glaucous green and when dry turn pale ochre, particularly in the central portions, though the margins remain conspicuous as white rings. Few or many colonies may occur on one tree and patches often grow together to give irregularly shaped, lobed colonies. The individual patches vary from 2cm to 20 or more cms in diameter and can be found at various heights and aspects on trees (Plate 1).

Plate 1. The Cobweb Fungus (*Athelia* spp.)

Identity

2. Taxonomically, the Cobweb fungus, like the toadstools and bracket fungi, is a Basidiomycete and is placed in the family *Corticiaceae* along with such fungi as *Peniophora gigantea* (used as a stump treatment against *Heterobasidion* (Synonym *Fomes*) *annosum* in forestry) and *Chondrostereum purpureum* (the casual agent of Silver leaf disease).

3. The separation of species in the genus *Athelia* has been subject to a great deal of confusion and even now has not completely rationalised. Poelt and Jülich (1969) and Oberwinkler (1970) refer to the parasite of algae and lichen on trees as *Athelia epiphylla*. However, a more recent authoritative work (Eriksson an Ryvarden 1973) refers to both *A. epiphylla* and *A. arachnoidea* as being parasitic on algae and lichens. They separate the two species on the number of spores produced by the basidium (the spore-bearing cell), *A. arachnoidea* being two-spored while *A. epiphylla* is four-spored. But they go on to suggest that *A. arachnoidea* may be merely a form of *A. epiphylla*. As many *Athelia* growths parasitic on lichens are sterile, i.e. non-sporing, it is not always possible to attempt a specific identification on this basis. Even where spores are present there may be two, three or four-spored basidia in the same specimen. Until this uncertainty has been resolved it is probably best to refer to the fungus simply as *Athelia*.

Hosts

4. Some *Athelia* species grow saprophytically on wood in the open while others are parasitic on lichens and algae. The species described above appears to be specifically parasitic on the lichen *Lecanora conizaeoides* and on *Protococcus*-type algae such as *Pleurococcus viridis*. Parasitism by *Athelia* on *Lecanora conizaeoides* has led to a marked decline of this lichen in various locations in certain years. (Hawksworth (ed) 1974).

Distribution and occurrence

5. Most of the cases reported to the Forestry Commission pathologists have been between August and December with the bulk of records in September and October. In the literature the season is given variously as ‘summer’, ‘October to March’ or ‘throughout the year’. Confusion over the specific identity of *Athelia* and the fact that it catches the casual observer’s eye only while in active growth may explain these rather contradictory statements.

6. Forestry Commission records of *Athelia* on lichens come from those areas where the lichen *Lecanora conizaeoides* is the main lichen on tree trunks. Relatively few records are involved so this may not be an accurate reflection of the true distribution but there is clearly a strong link between the two species.

7. In Britain *Lecanora conizaeoides* was believed to be very rare or absent up to the middle of the 19th century. It was probably first discovered in Leicester between 1839 and 1871 and by 1878 was described as not uncommon to the north of London. Since that time it has become quite widespread but it is only common in urban and suburban areas where sulphur dioxide pollution is quite high. It is the most tolerant of all lichens to atmospheric pollution and in large areas of the country is the only lichen to be found on trees and wooden structures (Laundon, 1973). The increase in atmospheric pollution has clearly assisted the spread and abundance of the lichen and it is interesting to speculate whether *Athelia* has also become more widespread and abundant over the same period.

Significance

8. As the Cobweb fungus is parasitic on algae and lichen growing on tree bark it does not have any detrimental effect on the health of the tree. No action is needed, therefore, to remove the fungus or control its development.

References

Eriksson, J. and Ryvarden, L. (1973) *The Corticiaceae of North Europe*, Vol.2. 96-131.

Hawksworth, D.L. (ed) (1974). *Changing flora and fauna of Britain*. 53-54

Laundon, J.R. (1973). *Urban lichen studies in air pollution and lichens*. (ed. Ferry, B.W. *et al*.) 119-120.

Oberwinkler, F. (1970). Die gattungen der basidiolichen. *Dtsch.Bot.Neue Folge* 4; 139-169.

Poelt, J. and Julich, W. (1969). über die Besiehungen zweier corticioider basidiomyceten zu algen. *österr. Bot.Z.* 116**,** 400-410

Published by: 15 February1983

Arboricultural Advisory and Information Officer
Forest Research Station
Alice Holt Lodge
Wrecclesham
Farnham
Surrey
GU10 4LH

Revised with minor alterations May 2010

The Arboricultural Advisory and Information Service provides advice and information about trees based on research results and experience, both national and international, to arboriculturists, landscape architects, the construction industry and other professionals, also to private individuals. The Arboricultural Research Note series is supported by the Forestry Commission.