

NEW FOREST HEATHLAND LICHEN TRAINING

Good Websites

The following websites are generally reliable for *Cladonia* pictures:

http://www.nhm2.uio.no/botanisk/lav/Photo_Gallery/PG_index.html#A

<http://kmubserv.tg.fh-giessen.de/pm/page.cfm?PRID=20&CFID=44274&CFTOKEN=77161419&PID=96>

<http://www.lichenology.info/cgi-bin/baseportal.pl?htx=pages&pg=intro>

<http://www.stridvall.se/lichens/gallery/albums.php>

<http://www.verspreidingsatlas.nl/korstmossen>

<http://www.lichens.lastdragon.org/index.html>

<http://www.uklichens.co.uk/>

Cladonia pictures will be appearing at <http://wessexlichengroup.org> in due course.

A list of species seen on a previous training meeting:

Reindeer Mosses: big bushy *Cladonia* species with no squamules anywhere

***Cladonia arbuscula* ssp *squarrosa*:** a big robust reindeer moss, with branching in threes and fours and strongly curved over. The very silvery white colour compared to yellow greener of *Cladonia portentosa* (view in shade not bright sunshine) is distinctive with experience. Pd + red-orange as in *C. ciliata*. Fire sensitive and mainly in short grazed heath or wet heath in the New Forest. In serious decline outside of the New Forest.

***Cladonia ciliata* var *ciliata*:** a reindeer moss with more open branch with mainly dichotomous branching and fairly strongly curving to one side. Easily separated from *Cladonia portentosa* by spot tests, this species is Pd + red-orange and the cortex is UV –. This var is brown-grey (no usnic acid). Good quality sites; frequent in the New Forest but var *tenuis* more frequent in Britain in general.

***Cladonia ciliata* var *tenuis*:** as *Cladonia ciliata* var *ciliata* but has usnic acid, so silver-grey-yellow coloured.

***Cladonia portentosa*:** the commonest reindeer moss, with dense branching mainly branching in threes and fours. Mostly even branching, but can be some what curving and one sided, which is confusing. More yellow greener than the silver-grey of *Cladonia arbuscula* (view in shade not bright sunshine). The Pd – reaction and bright blue-white UV fluorescence of the cortex lower down on the plants are distinctive.

***Cladonia uncialis* ssp *biuncialis*:** distinctive swollen podetia branching mainly in twos, holes in axils of branches. Cortex marbled giving a greener tinge to the colour than *Cladonia zopfii*. Common species but generally in good habitat, moderately fire sensitive.

***Cladonia zopfii*:** similar to *Cladonia uncialis*, but with wider branching angles and no holes in the axils of the branches. Also has a more intact cortex, giving a greyer colour than *Cladonia uncialis*, cortex lumpy on mature podetia. A big rekind, previously collected in 1911 by Livens, potentially from near the site we saw, but otherwise only recorded from Scotland recently. Now found in a few sites in the New Forest in short grazed damp humid heath and in drier hollow ways.

Cetraria species: similar bushy species to the Reindeer Mosses but glossy brown:

Cetraria aculeata: dark brown, open branching, often sprawling, pseudocyphellae concave, elongate, usually in pits. More in grassland than *Cetraria muricata*.

Cetraria muricata: also dark brown, more erect, with denser branching with flat circular pseudocyphellae not in pits. In acid heath mainly.

Pycnothelia Babytooth: related to the above in that it has no squamules but the primary crust forming thallus, ephemeral in the Reindeer mosses, is persistent and the podetia are small and short.

Pycnothelia papillaria: highly distinctive teeth like short podetia on white crust. Widespread in the high quality lowland heath, uncommon in upland England and Wales but common in the Highlands. Potentially declining outside of the New Forest in lowland heath.

The rest of Cladonia: squamules present somewhere but may need looking for on some species such as *Cladonia furcata*.

Cladonia callosa: a recent important find from the New Forest where widespread on banks on hollow way sides and ruts; previously only known from the uplands. Small brown squamules with white tomentose undersides and occasional short slightly branched podetia. Distinctive spot tests are Pd – and bright bright blue-white UV fluorescence from the cortex (seen on undersides of basal squamules).

Cladonia cervicornis ssp cervicornis (to be *Cladonia cervicornis* sensu stricto): I only saw a little of this at the grassland site at the beginning and did not point it out. Larger basal squamules and more dissected than *Cladonia verticillata*, are the key character. The podetia are a bit less likely to get big enough to grow another from the centre, but will do if sheltered enough, so this is not diagnostic. Both typically have the underside of the basal squamules with whitish ends and grey-brown bases; the effect is some time described as mauve. Confined to grasslands and largely absent from heath.

Cladonia cervicornis ssp verticillata (to be *Cladonia verticillata*): frequently supports tiers of podetia growing out of the centre of the podetia below, but smaller plants frequently do not. Actually told from *Cladonia cervicornis* sensu stricto by the smaller less dissected basal squamules. Typically in lichen rich heaths. See *Cladonia phyllophora* for differences.

Cladonia coccifera sensu lato: a distinctive species with yellow green cups with red apothecia (large) or pycnidia (small). Includes considerable variation, which has been divided up as a more scruffy sorediate podetia form called *Cladonia diversa* and a form with more corticated podetia with larger granules in the cup called *Cladonia coccifera* sensu stricto. This split is probably not maintainable but genetic work is awaited. *Cladonia diversa* is widespread, while, *Cladonia coccifera* sensu stricto is supposed to be a rare montane taxa, but material matching it has been found in high quality sites in the New Forest.

Cladonia cornuta: a “heathtail” (Dutch name for *Cladonia* species with simple spiky podetia), similar to the common tree and occasional humus species *Cladonia coniocraea* but taller and only sorediate in the top have. Can have small cups but usually without. The corticated base is brown when well lit, not green as in the similar *Cladonia ochrochlora* found on lignum. The latter is also spindlier and has wider cups.

Cladonia cryptochlorophaea: a pixie cup in the *Cladonia chlorophaea* sensu lato. *Cladonia chlorophaea* sensu stricto is a green species with fine soredia, which rarely erode to show the

medulla. *Cladonia cryptochlorophaea* is as tall and greenish but is more granular and the cortex frequently erodes to show the medulla. The various segregates of the *Cladonia chlorophaea* sensu lato group, which all erode to show the cortex, are lumped as *Cladonia greyi* sensu lato by the Dutch and others and this would be the best practice to adopt. The *Cladonia greyi* sensu lato group dominates in heathland, where *Cladonia chlorophaea* sensu stricto is rare. *Cladonia cryptochlorophaea* is the commonest *Cladonia greyi* sensu lato segregate in Britain but not as frequent as *Cladonia greyi* sensu stricto in the New Forest. Here the former occurs in shadier situations on deeper humus.

***Cladonia digitata*:** a distinctive species characteristic of lignum, grey white, with cups on the podetia with red apothecia or pycnidia. Distinguished from the similar *Cladonia polydactyla* by wider cups and large basal squamules with sorediate undersides. Rare in heathland.

***Cladonia diversa*:** see *Cladonia coccifera* sensu lato.

***Cladonia floerkeana*:** the Devils Matchsticks, grey-white podetia with no cups and with red apothecia or pycnidia at tips, K –. The very coarsely granular podetia are distinctive.

***Cladonia furcata*:** a common bushy grey-brown lichen of less acid heaths and especially grasslands. Looks much like a Reindeer Moss but there are at least some squamules growing from the podetia. See the similar *Cladonia rangiformis*.

***Cladonia greyi* sensu stricto:** a widespread pixie cup in well lit open humus in the New Forest heaths. A small brown-grey podetia, with a very granular cortex, which erodes to show an often pinkish medulla. Rarely recorded but may be a characteristic lowland heathland species. Recent genetic work has shown that it is not actually related to *Cladonia chlorophaea* sensu stricto with which it was lumped in the past.

***Cladonia macilenta*:** finely sorediate heathtail with red apothecia or pycnidia at tips, K + yellow. Similar to the epiphytic *Cladonia polydactyla*, which is also K + yellow, but this has cups when mature. Immature *Cladonia polydactyla* without cups, is often mistaken for *Cladonia macilenta*, but *Cladonia polydactyla* is coarsely sorediate. *Cladonia macilenta* is probably over recorded and is typical of high quality sites.

***Cladonia phyllophora*:** recently found to be widespread in high quality sites in the New Forest, although previously rarely recorded from the lowlands. Quite similar to *Cladonia ramulosa*, but the cortex does not break up and is larger. Also similar to *Cladonia verticillata*, but proliferates from the margins of the cup, and the cortex is more areolate with a cobweb like thin cortex between the areoles and often a blackened base.

***Cladonia ramulosa*:** a common widespread but very variable small species, brown apothecia on small branched podetia, with the cortex breaking up.

***Cladonia rangiformis*:** a similar species to *Cladonia furcata*, but has a much whiter appearance due to islands of cortex with algae cells set in an algae free white background, producing a pattern like that on a giraffe's neck. Found in more base rich situations than most *Cladonia* species, including disturbed grasslands on the New Forest.

***Cladonia squamosa* var *subsquamosa*:** we saw a very distinctive heathland form, with wide chestnut cups, potentially unrecognised species.

***Cladonia strepsilis*:** flat masses of flat basal squamules, with a distinctive bronze-green colour, rare distorted podetia. Diagnostic fleeting green reaction to bleach (C). Species of high quality damp to wet heath. Widespread in the high quality lowland heath, uncommon in upland England and Wales but common in the Highlands. Potentially declining outside of the New Forest in lowland heath.

Cladonia subcervicornis: another big find in the New Forest, confirming previous vague records, now known to be widespread here. Lowland material on soil is quite similar to *Cladonia strepsilis* but bluish or lead-grey with frosting at tips, C-. A mainly rock growing upland species, which is rare on sandrocks in the lowlands and appears to be also a species of high quality damp to wet heath.

Crusts: form crust with no podetia. Other than *Dibaeis* and *Icmadophila* small and not very obvious. A more advanced level of study!

Dibaeis baeomyces: an always sterile white crust with us, has large rounded granules on the surface (schizidia) that fluoresce UV + orange. On flat wet humus, a mainly upland species which is common in upland England, uncommon in lowlands.

Icmadophila ericetorum: similar to *Dibaeis baeomyces* but lacks schizidia and is UV + white, rarely with distinctive sessile pink apothecia. On vertical humus on banks. Widespread in the New Forest but rare in the lowlands and upland England and Wales, common in the Highlands.

Placynthiella dasaea: thin black crust on peat, with paler brown soredia developing. Probably widespread, but only just recognised as occurring in the lowlands.

Placynthiella icmalea: thin black crust on peat, with coralloid isidia. Very common.