

## MACROLICHENS OF DU PAGE COUNTY, ILLINOIS

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### ABSTRACT

Sixty macrolichens are reported for Du Page County, Illinois, of which one-third are considered frequent to common; only 40% of these were reported by Calkins (1896) for the entire Chicago region. Information is provided on the frequency and habitats for each species as well as keys to their identification. With the exception of two literature reports, all species are represented by at least one recently collected voucher specimen.

### INTRODUCTION

Du Page County, suburban in character, is located in northeastern Illinois, just west of Cook County and the city of Chicago. According to Schwegman (1973), the county is largely in the Northeastern Morainal Division of Illinois' natural divisions; the southwestern corner of the county is included within the Grand Prairie Division. In the presettlement period, about 75% of the county was non-wooded and dominated by tall-grass prairie and wetland; the other 25% consisted of small savannas and groves timbered by widely scattered oaks and hickories (Lampa, 1985). Very likely the preponderance of heavy soil prairies, regular fire, and few trees restricted habitation by terricolous and corticolous lichen species.

Armstrong (1977) reported 17 macrolichens from the Morton Arboretum near Lisle in Du Page County. McKnight *et al.* (1987) reported four macrolichens from

Du Page County, and Calkins (1896) cited only one lichen specifically from the county, though the occurrence of several others was implied. Aside from these, no other authors cite specimens specifically from locations within Du Page County. Even Hale's (1979) general range maps exclude 40 % of the species currently known from the county.

## FLORISTICS

To be sure, one's first impression of the county is that the lichen flora is depauperate, consisting largely of *Candelaria concolor* and *Physcia millegrana* growing on trees along suburban and rural roads and fencerows. Recent field work in Du Page County nevertheless has revealed a macrolichen flora consisting of nearly sixty extant species.

Certain isolated forest preserves and the Morton Arboretum provide the habitat for most of the macrolichens. Many of these lichens are either boreal or eastern temperate in their general distribution. Most of the southeastern species which are common in southern Illinois are absent in Du Page County. Wilhelm & Ladd (1985) reported a coefficient of species similarity between Jackson and Du Page Counties of 0.43. Subsequent field work has indicated that this figure is closer to 0.53; it is unlikely that significant changes in this index will be measured in the future. Perhaps more interesting, however, is the fact that 34 species were listed as frequent to common in Jackson County, whereas in Du Page County only 21 are considered frequent to common. This represents a coefficient of similarity of 0.33 between the common lichen component of each county.

Brodo (1968) cited 35 macrolichens from Nassau County, New York, which county he described as "... a classic example of suburbia," a description which aptly befits Du Page County. Twenty of these species are found in both counties.

It is interesting to note that only 40 % of our present-day macrolichen flora was reported by Calkins (1896) for the Chicago region, within which region he included Du Page County. Some of this discrepancy is accounted for by recent changes in species concept; nearly 25 % of our species were not recognized in 1896. That at least 35 % of our current flora, however, was unknown to Calkins may remain inexplicable; further complicating the problem are the questions posed by the following observations of Calkins, page 7:

Localities in and around Chicago formerly rich in lichenose vegetation are now destitute of it. The species were and are mostly corticolous, with a few on rocks, where exposed and even on the boulders of our prairies. But the tidal waves of civilization have changed the conditions under which lichens grow, and to find them abundantly we must seek the country where the air on which they feed is pure and the substrates suitable.

One scarcely can imagine what species comprised this once "rich, lichenose flora." Can those original lichens to which he referred have made a dramatic comeback over the last century? Probably not, though one cannot help but wonder about the effects of unbridled smokestack industry during Calkins' time. Our air is measurably cleaner in some respects today than it was even twenty years ago.

Calkins described eight species of macrolichens as common or abundant in the Chicago region. Of these, only three can be construed as common today: *Cladonia chorophaea* s.l. (*C. pyxidata* of Calkins), *Flavoparmelia caperata*, and *Physcia stel-*

*laris*. The coefficient of similarity between species considered common in 1896 and those considered common today is 0.28. *Ramalina americana* (*R. calicaris* var. *fastigiata* of Calkins), *Parmotrema perforatum*, and *Punctelia subrudecta* (*Parmelia borreri* of Calkins) were also listed as common species locally; with the exception of the latter, we have yet to see them, even in the greater Chicago region. Calkins listed "*Cladonia fimbriata* var. *tubaeformis*" as "... found throughout our territory" and described it thusly:

Podetia slender, elongated, tawny-brown, often with squamules; cups smaller [than *C. fimbriata*], toothed or entire; proliferous, fimbriate: apothecia confluent.

It is unclear to us what he might have meant by this species, but the morphology certainly is not common locally today. Though they are impossible to quantify or even qualify, it appears as though real and significant changes have occurred in our lichen flora over the last 90 years.

The Tall-Grass Prairie biome of the Midwest, once replete with regular prairie fires and largely treeless except for scattered stands of open-grown oaks and hickories, has now a nearly continuous inhabitancy by many different kinds of trees, both native and introduced. This corticolous span now bridges the northern forests with those to the south and east. It is possible that such a change in the distribution of corticolous substrates has allowed at least less modal lichen species an opportunity to extend their ranges. It is doubtful, for example, whether *Flavopunctelia soredica* (Culberson, 1960) was native this far south, or that *Pyxine caesiopruinosa* (Culberson & Hale, 1965) grew this far north prior to settlement. Our records indicate that this same sort of post-Calkins enrichment may have occurred among the crustose lichens as well.

## LICHEN HABITATS

Du Page County, 331 square miles of morainic ridges and shallow river valleys, was settled in the early 1830's. It had a population of nearly 700,000 people by the 1980 census, and it continues to grow at a rapid rate. As of this writing, the county is approximately 75% suburban in character, and everywhere criss-crossed by railroads, paved roads, and expressways. Only about 10% of the county has any "natural" character (Lampa, 1985). Since the autochthonous lichen flora of presettlement Du Page County is poorly recorded, it is difficult at this point to know which species have been extirpated or had their populations seriously compromised, which species have entered the county in recent years, and which ones are (or were) part of some natural community. It is a certainty, however, that the county today contains far more corticolous habitat than in the presettlement (1832) period; also, there is more exposed rock and rock-like substrate as well as more exposed, weathered clays and leached tills. While the major habitats for lichens in the county today include corticolous, saxicolous, and terricolous substrates, fully 90% of the macrolichens considered frequent to common are those from corticolous substrates.

Corticolous lichens inhabit trees in open woods and picnic areas, swamps and floodplains, and rural roadsides and yards. They also can be found on fence posts and old wood at farm dump sites. Several species of trees appear to form excellent

substrates locally for the corticolous lichens. These include species of *Crataegus*, *Fraxinus*, *Salix*, and *Ulmus*, as well as *Acer negundo*, *Populus deltoides*, and medium-aged trees of *Juglans nigra*; the *Cladoniae* are usually aggregated around the bases of these trees. Macrolichens which are frequent to common on these substrates locally are: *Candelaria concolor*, *Cladonia coniocraea*, *C. ramulosa*, *Flavoparmelia caperata*, *Parmelia sulcata*, *Phaeophyscia pusilloides*, *P. rubropulchra*, *Physcia adscendens*, *P. millegrana*, *P. stellaris*, *Physciella chloantha*, *Physconia detera*, *Punctelia bolliana*, *Xanthoria candelaria*, and *X. fallax*. Curiously, fallen logs in Du Page County, even in remote wooded areas, are not as likely to harbor lichens as they are in other biomes in the eastern United States, though when they do they are usually inhabited by *Cladonia bacillaris*, *C. coniocraea*, *C. cristatella*, *C. ramulosa*, and *C. rei*.

Saxicolous lichens most often are found growing on rocks dumped along fence-rows, on old concrete, flagstone walls and other edifices, and on old farm building foundations; all of these substrates are HCl+. Bedrock is exposed only along the Des Plaines River in the southeastern corner of the county and along the West Branch of the Du Page River in Naperville. These are dolomitic formations of Silurian age. There are a few igneous erratics which are inhabited by lichens. On the whole, however, natural saxicolous habitat is rare in the county. The common saxicolous species locally are even more frequent on corticolous substrates; these species include: *Candelaria concolor*, *Physcia adscendens*, *Physciella chloantha*, and *Xanthoria candelaria*.

Most of the terricolous lichens are found on old road and railroad cuts and worn-out abandoned fields where clayey or silty tills are exposed to weathering and leaching, and competition from vascular plants remains low. Very often such areas are characterized by vascular plants of low phytomass productivity, such as *Danthonia spirata* and *Antennaria* spp. The frequent to common macrolichens here include *Cladonia chlorophaea*, *C. cristatella*, *C. peziziformis*, *C. polycarpoides*, and *C. rei*.

## CATALOGUE OF THE MACROLICHENS OF DU PAGE COUNTY

The following is an annotated catalogue of macrolichens known from Du Page County. Arrangement is alphabetical by genus. Nomenclature follows Egan (1986); names employed by Hale (1979) and Calkins (1896) are included as synonyms where appropriate. Unless otherwise specified, a single representative specimen is chosen to voucher each reported species. All cited specimens are filed at the Morton Arboretum (MOR), Lisle, Illinois. Lichen substances were determined using thin-layer chromatography and the three solvents as described by Culberson (1972).

### KEY TO THE GENERA

- Thallus gelatinous when wet, blackish to slate gray; medulla absent.
  - Thallus without isidia. .... HEPPIA
  - Thallus sparsely to densely isidiate.
    - Thallus suberectose, adnate, without distinct lobes; prothallus blue-green and evident at the margins. .... PLACYNTHIUM
    - Thallus not at all crustose, the lobes mostly evident and well-developed; prothallus absent. .... LEPTOGIUM
- Thallus not gelatinous, variously colored; medulla evident.
  - Thallus fruticose, or of adnate to suberect squamules.
    - Thallus in part or entirely of adnate to erect or suberect squamules.

- Squamules brown, adnate; perithecia present. . . . . DERMATOCARPON
- Squamules greenish or gray, erect or suberect; perithecia absent. . . . . CLADONIA
- Thallus without squamules.
- Podetia hollow.
- Podetia with a fibrous, dull surface. . . . . CLADINA
- Podetia with a corticate, smooth, lustrous surface. . . . . CLADONIA
- Podetia with a central medullar core, not hollow.
- Fibrils evident; branches smoothly terete. . . . . USNEA
- Fibrils absent; branches irregularly wrinkled. . . . . EVERNIA
- Thallus adnate to loosely appressed, but distinctly foliose or umbilicate.
- Thallus orange, yellow, yellowish-green, or yellowish-gray; medulla C-.
- Cortex K+ deep purple. . . . . XANTHORIA
- Cortex K- or K+ yellow.
- Thallus esorediate, saxicolous. . . . . LECANORA
- Thallus sorediate, corticolous.
- Thallus bright lemon yellow or yellowish-green; lobes small, less than 1 mm wide; medulla P- . . . . . CANDELARIA
- Thallus yellow-green; lobes much more than 1 mm wide; medulla P+ red. . . . . FLAVOPARMELIA
- Thallus without yellowish tints, or if yellowish-green, then the medulla C+ red.
- Thallus brown or brownish-gray; cortex K-.
- Lower cortex densely white- or tan-tomentose beneath; rhizines coarse, few, and branched. . . . . PELTIGERA
- Lower cortex smooth beneath or with rhizines, but not concealed by a dense tomentum.
- Lobe surfaces abundantly pruinose; soralia marginal. . . . . PHYSCONIA
- Lobe surfaces smooth, or if pruinose, then esorediate.
- Medulla either C+ red or P+ red; lobes more than 1.5 mm wide. . . . . PARMELIA
- Medulla C- and P-; lobes less than 1.5 mm wide.
- Lobes flowing together; rhizines absent. . . . . HYPERPHYSCIA
- Lobes discrete; rhizines present. . . . . PHAEOPHYSCIA
- Thallus mineral gray, whitish-gray, or yellowish-green; cortex K+ yellow or K-.
- Upper cortex either with small white pores or the medulla C+ red, or both.
- Thallus yellowish-green, sorediate. . . . . FLAVOPUNCTELIA
- Thallus gray or grayish-green, sorediate or not. . . . . PUNCTELIA
- Upper cortex both without white pores and with C- medullary reactions.
- Lower cortex white or light tan.
- Upper cortex K-. . . . . PHYSCIELLA
- Upper cortex K+ yellow. . . . . PHYSCIA
- Lower cortex brown or black.
- Medulla distinctly tinted orange or salmon. . . . . PYXINE
- Medulla white or pale yellow.
- Medulla K-.
- Lobes thick and appearing inflated; soralia at the lobe tips. . . . . HYPOGYMNIA
- Lobes thin, flat; soralia laminal. . . . . PARMEIINA
- Medulla K+ yellow or red.
- Lobes broad, usually 4 mm or more wide, typically with a rhizine-free zone near the margins. . . . . PARMOTREMA
- Lobes narrower; rhizines typically distributed throughout below.
- Upper cortex with distinct white markings, particularly toward the tips. . . . . PARMELIA
- Upper cortex without white markings. . . . . PARMELINA

### Candelaria Mass.

CANDELARIA CONCOLOR (Dicks.) B. Stein — Ubiquitous, this is probably the most abundant lichen in the county. It is found on a wide variety of corticolous substrates and frequently on rock; and it is characteristic on planted shade trees along streets and boulevards and in back yards, as well as on naturally open-grown trees.  
= *Teloschistes concolor* (Dicks.) Tuck. Lampa 2.

### Cladina (Nyl.) Harm.

CLADINA SUBTENUIS (des Abb.) Hale & W. Culb. — Rare, on exposed clayey tills in dry upland fields. Probably = *Cladonia rangiferina* var. *sylvatica* of Calkins, not L. Lampa 79.

### Cladonia Hill ex Browne

Podetia forming cups.

Podetia esorediate.

Central portions of the cups proliferating, producing secondary and tertiary cups.

..... *C. cervicornis* ssp. *verticillata*

Cups not proliferating, or proliferating from their margins only, the membranes characteristically perforate. .... *C. multiformis*

Podetia nearly or quite covered by fine to coarse soredia.

Podetia very elongate, terminated by small cups, finely sorediate.

Cups usually poorly developed and on only a few podetia; grayanic acid present.

..... *C. cylindrica*

Most or all of the podetia with well-developed cups; grayanic acid absent.

..... *C. fimbriata*

Podetia stout, the cups often deep and flaring; finely to coarsely sorediate.

Apothecia and/or pycnidia red; thallus yellowish-green; usnic acid present.

..... *C. pleurota*

Apothecia and/or pycnidia brown; thallus grayish or whitish-green; usnic acid absent.

Grayanic acid present. .... *C. grayi*

Grayanic acid absent.

Cryptochlorophaeic acid present. .... *C. cryptochlorophaea*

Cryptochlorophaeic acid absent. .... *C. chlorophaea*

Podetia not forming cups, or podetia absent.

Podetia esorediate or podetia chronically absent.

Podetia much branched and elongated; basal squamules few or absent; apothecia absent. .... *C. furcata*

Podetia simple or only sparingly branched; basal squamules well developed; apothecia usually conspicuous, or podetia chronically absent.

Squamules K+ yellow turning red. .... *C. polycarpoides*

Squamules K- or K+ yellowish.

Apothecia red (rarely black).

Podetia wholly corticate. .... *C. cristatella*

Podetia with ecorticate patches which turn brown and translucent.

..... *C. didyma*

Apothecia tan or brown to nigrescent.

Thallus yellowish-green; usnic acid present. .... *C. piedmontensis*

Thallus grayish-green or gray; usnic acid absent. .... *C. peziziformis*

Podetia sorediate, at least in part.

Apothecia and/or pycnidia red; barbatic acid present; podetia P-.

Squamules incised, esorediate; podetia scarcely sorediate, beset with granular or isidioid squamules except in ecorticate areas which turn brown and translucent.

..... *C. didyma*

Squamules occasionally lobed but not incised, sorediate; podetia with patches of fine soredia. .... *C. bacillaris*

Apothecia and pycnidia brown; barbatic acid absent; podetia P- or P+ red.

Podetia P-; homosekikaic acid present. .... *C. rei*

Podetia P+ red; homosekikaic acid absent.

Grayanic acid present. .... *C. cylindrica*

Grayanic acid absent.

Squamules less than 2 mm long, usually incised; podetia sorediate nearly or quite throughout. .... *C. ramulosa*

Many squamules more than 2 mm long, lobed, but not much incised; basal portions of podetia with large corticate patches. .... *C. coniocraea*

**CLADONIA BACILLARIS** (Ach.) Nyl. --- Very common, in open woods at the bases of *Quercus rubra* or occasionally other trees; also on decorticate logs in partly shaded woods and an old wood in farm dump sites where it often grows in full sun with other *Cladoniae*. Lampa 101.

**CLADONIA CERVICORNIS** (Ach.) Flot. ssp. **VERTICILLATA** (Hoffm.) Ahti - Uncommon, on exposed till in old fields; we have one specimen from exposed dry farm wood. = *C. verticillata* (Hoffm.) Schaer.; probably = *C. gracilis* var. *verticillata* Fr. of Calkins. Lampa 177.

**CLADONIA CHLOROPHAEA** (Flk. ex Somm.) Spreng. --- Frequent, in open areas on old farm wood, among mosses at the bases of trees (particularly *Crataegus*), and on exposed clayey tills. This is the most common element of the *C. chlorophaea* complex in Du Page County. Probably = *Cladonia pyxidata* (in part) of Calkins, not (L.) Hoffm. ?*C. pyxidata* var. *pocillum* of Calkins, not Ach. Lampa 130.

**CLADONIA CONIOCRAEA** (Flk.) Spreng. --- Frequent, on decorticate logs in shady woods and swamps; it also grows at the base of *Quercus rubra* in mesic woods. This name may be misapplied to our element; it is possible that our material is best referred to as *C. ochrochlora* Flk., but the results of Ahti's studies are pending. Wilhelm 12474.

**CLADONIA CRISTATELLA** Tuck. --- Frequent, on dry decorticate wood, especially fence posts and stumps in open areas; it also grows on exposed clayey, silty, or arenaceous tills. Lampa 105.

**CLADONIA CRYPTOCHLOROPHAEA** Asah. --- Occasional, this segregate of *C. chlorophaea* is found locally on exposed tills and among mosses at the bases of *Crataegus* trees in open areas. Of our four specimens, three contained fumarprotocetraric acid, and none of them contained atranorin, though we have others from nearby counties which do. Lampa 143.

**CLADONIA CYLINDRICA** (A. Evans) A. Evans --- Rare and restricted to shaded decorticate logs in low woods. Wilhelm 12475.

**CLADONIA DIDYMA** (Fée) Vain. --- Rare, known from a single collection made on an exposed, dry decorticate log on the West Branch Reservoir Forest Preserve near West Chicago. Lampa 87.

**CLADONIA FIMBRIATA** (L.) Fr. — Uncommon; all of our specimens are from wooden shingles and decorticate logs in partly shaded areas. Perhaps including *C. fimbriata* var. *tubaeformis* Fr. of Calkins. Armstrong 991.

**CLADONIA FURCATA** (Huds.) Schrad. — Rare, this species is restricted locally to exposed tills in partly shaded areas. Lampa 161.

**CLADONIA GRAYI** G. K. Merr. ex Sandst. — Occasional; this segregate of *C. chlorophaea* occurs on exposed decorticate logs and on exposed silty or silty-clay tills. Of our four specimens one contains atranorin and none of them contain fumarprotocetraric acid. Lampa 220.

**CLADONIA MULTIFORMIS** G. K. Merr. — Rare, known solely on the basis of a single collection made on an exposed silty clay till at Timber Ridge Forest Preserve near West Chicago. Lampa 84; this specimen is cited by McKnight *et al.* (1987) as new to Illinois.

**CLADONIA PEZIZIFORMIS** (With.) Laund. — Frequent, on clayey tills, and rarely on tree bases and decorticate logs in open woods and fields. = *C. capitata* (Michx.) Spreng. Lampa 121.

**CLADONIA PIEDMONTENSIS** G. K. Merr. — Rare, known locally from a single collection made on exposed clayey till in an old field at Winfield Mounds Forest Preserve near West Chicago. A similar species, *C. robbinsii* A. Evans, is known from nearby counties; it differs from *C. piedmontensis* in the larger [over (2) 3 mm long] squamules and the presence of barbatic acid. Lampa 183.

**CLADONIA PL.EUROTA** (Flk.) Schaer. — Rare, this species grows locally on exposed silty clay tills and decorticate logs. Lampa 125.

**CLADONIA POLYCARPOIDES** Nyl. — Common, on exposed tills in old fields and along road cuts. Lampa 128.

**CLADONIA RAMULOSA** (With.) Laund. — Very common, in shaded or somewhat open woods; locally it usually grows at the base of *Quercus rubra*, but also on decorticate fallen logs. Some recent authors have called this plant *C. anomaea* (Ach.) Ahti & P. James, but according to Laundon (1984) the better name for this species, long known as *C. pityrea* (Flk.) Fr., is *C. ramulosa*. Wilhelm & Lampa 12404.

**CLADONIA REI** Schaer. — Common, in exposed or semi-shaded areas where it grows on wooden shingles, burned and decorticate logs, and on exposed silty or clayey tills. Lampa 111.

#### **Dermatocarpon** Eschw.

**DERMATOCARPON MINIATUM** (L.) Mann — Occasional, on various kinds of boulders and on bedrock in moist shaded areas. = *Endocarpon miniatum* (L.) Schaer.; including *E. miniatum* var. *complicatum* Schaer. and *E. miniatum* var. *muhlenbergii* Ach. Lampa 5.



### Evernia Ach.

EVERNIA MESOMORPHA Nyl. — Infrequent, a boreal species found locally on the lower trunks of *Crataegus* and *Fraxinus* in open park-like areas. Though it is represented by only one specimen, we have seen several thalli; locally, thalli of this species are small and easily overlooked. Lampa 167; the specimen cited here was listed as new to Illinois by McKnight *et al.* (1987).

### Flavoparmelia Hale

FLAVOPARMELIA CAPERATA (L.) Hale — Frequent, on a wide variety of open-grown trees, both in landscaped areas as well as in natural open wooded areas. = *Pseudoparmelia caperata* (L.) Hale. Lampa 43.

### Flavopunctelia (Krog) Hale

Upper cortex beset with white pores (pseudocyphellae). . . . . *F. flaventior*  
Upper cortex without white pores. . . . . *F. soredica*

FLAVOPUNCTELIA FLAVENTIOR (Stirt.) Hale — Infrequent generally, though locally frequent at the Morton Arboretum and at Elsen's Hill in the West Du Page Woods Forest Preserve near West Chicago. It is known from the bark of several deciduous trees, but it is perhaps most frequent on species of the red oak group. = *Parmelia flaventior* Stirt. Wilhelm 12423. The specimen cited here was listed as new to Illinois by McKnight *et al.* (1987).

FLAVOPUNCTELIA SOREDICA (Nyl.) Hale — Uncommon, this boreal species is locally frequent at Elsen's Hill in the West Du Page Woods Forest Preserve near West Chicago, particularly on open-grown *Crataegus*, though it grows also on *Ulmus*, *Fraxinus*, *Rhus typhina*, and *Salix nigra* there and elsewhere. = *Parmelia ulophyllodes* (Vain.) Sav. Lampa 21a. The specimen cited here was listed as new to Illinois by McKnight *et al.* (1987).

### Heppia Naeg.

HEPPIA LUTOSA (Ach.) Nyl. — Rare, known only from shaded vertical walls at the waterfall on the Waterfall Glen Forest Preserve; it grows on argillaceous silty dolomite of the Niagaran series. Wilhelm & Lampa 12401.

### Hyperphyscia Poelt & Vezda

HYPERPHYSICIA ADGLUTINATA (Flk.) Poelt & Vezda — Occasional, although it is easily overlooked. It is most frequent on open-grown elms. = *Physciopsis adglutinata* (Flk.) M. Choisy. Wilhelm & Lampa 12391.

### Hypogymnia (Nyl.) W. Wats.

HYPOGYMNIA PHYSODES (L.) W. Wats. — Rare, this boreal species is now known locally only from a young open-grown tree at West Du Page Woods Forest Preserve. Calkins (1896) reported it specifically from Du Page County and listed its habitat as oaks. = *Parmelia physodes* (L.) Ach. Lampa 53.

### Lecanora Ach.

**LECANORA MURALIS** (Schreb.) Rabenh. — Rare, known locally only from a few HCl+ boulders in open fields at disparate locations across the county, though in adjacent counties it has been collected from limestone walls. Lampa 6.

### Leptogium Gray

Thallus olivaceous to blackish-brown. .... *L. dactylinum*  
Thallus slate gray. .... *L. cyanescens*

**LEPTOGIUM CYANESCENS** (Rabenh.) Koerb. — Rare, this species is known locally only from partly shaded, carbonate rock. Wilhelm & Lampa 12392.

**LEPTOGIUM DACTYLINUM** Tuck. — Rare, this species is known locally only from a single collection made from a shaded vertical dolomitic cliff face at the Waterfall Glen Forest Preserve. Wilhelm & Lampa 12398.

### Parmelia Ach.

Thallus dark chestnut-brown, with diffuse powdery soredia mixed with small isidia.

..... *P. subaurifera*

Thallus gray or grayish-green, either isidiate or sorediate, but not both.

Thallus isidiate. .... *P. squarrosa*

Thallus sorediate. .... *P. sulcata*

**PARMELIA SQUARROSA** Hale — Rare, a boreal species known locally from only a few open-grown *Crataegus* trees at West Du Page Woods Forest Preserve. All Chicago region specimens have rhizines that are notably squarrose-branched, and none of our material contains lobaric acid. For a review of the *P. saxatilis* (L.) Ach. complex, see Thomson (1984) and Hale (1979). Lampa 16b.

**PARMELIA SUBAURIFERA** Nyl. — Occasional; this boreal species occurs in partly shaded woods and in park-like areas, where it is found on the branches and lower trunks of a variety of deciduous trees. Esslinger (1978) has proposed the name *Melanelia subaurifera* for this species, but it is likely that if the brown *Parmeliae* are to be segregated, the genus *Pleurosticta* Petrak will be the proper placement. Lampa 18.

**PARMELIA SULCATA** Tayl. — Common, on a wide variety of open-grown trees, even in suburban areas. This is our most common large-lobed foliose species. = *P. saxatilis* Fr. var. *sulcata* Tayl. of Calkins. Wilhelm & Hedborn 12406.

### Parmelina Hale

**PARMELINA AURULENTA** (Tuck.) Hale — Rare, known locally only from two collections, one made from wooden shingles on a partly shaded roof, the other from *Ulmus rubra* in a shaded swamp. Wilhelm & Hedborn 12409.

### Parmotrema Mass.

**PARMOTREMA RETICULATUM** (Tayl.) M. Choisy — Rare, this species is known locally only from a landscape specimen of *Quercus palustris* on the grounds of the

Morton Arboretum. It is likely that Calkins' report of *Parmelia perlata* is referable here; he described the plant as "found throughout our territory on oaks and other trees, and on boulders near Lemont." Such is no longer the case. Wilhelm & Lampa 12390.

### *Peltigera* Willd.

**PELTIGERA CANINA** (L.) Willd. — Rare, this species is known only from exposed silty clay till in an old field near Woodridge, where it was growing in full sun with *Antennaria neglecta*. Including *Peltigera rufescens* (Neck.) Hoffm. Lampa 85.

### *Phaeophyscia* Moberg

Thallus esorediate.

Apothecia common; margins of lobes entire. . . . . *P. ciliata*

Apothecia rare; margins of lobes dissected into lobulate fringes. . . . . *P. imbricata*

Thallus sorediate.

Medulla red or deep orange nearly or quite throughout. . . . . *P. rubropulchra*

Medulla white.

Margins of apothecia and lobes beset with colorless cortical hairs. . . . . *P. cernohorskyi*

Thallus without colorless cortical hairs, though white-tipped rhizines may project profusely along the lobe margins.

Soredia granular, somewhat diffused in poorly delimited soralia. . . . . *P. adiastrata*

Soredia fine, confined to rounded soralia.

Soralia strongly capitate, almost stipitate, primarily terminal on main or secondary lobes; corticolous or saxicolous. . . . . *P. pusilloides*

Soralia orbicular, but not capitate; saxicolous. . . . . *P. orbicularis*

**PHAEOPHYSCIA ADIASTOLA** (Essl.) Essl. — Uncommon, this species grows in moist shaded areas, often among mosses on both carbonate and granitic rock. Lampa 23.

**PHAEOPHYSCIA CERNOHORSKYI** (Nadv.) Essl. — Uncommon, this species is locally frequent in park-like areas and landscape settings, where it grows on a variety of corticolous substrates; it is also known from a granitic erratic at Springbrook Forest Preserve. Wilhelm & Hedborn 12418.

**PHAEOPHYSCIA CILIATA** (Hoffm.) Moberg — Occasional, on the trunks and upper branches of a variety of trees growing in open, park-like areas; it is also known locally from carbonate boulders and dolomitic bedrock. = *Physcia obscura* (Ehrh.) Nyl. Wilhelm & Hedborn 12417.

**PHAEOPHYSCIA IMBRICATA** (Vain.) Essl. — Rare, known locally only from a single collection made on the trunk of *Ulmus americana* at Herrick Lake Forest Preserve. Lampa 223.

**PHAEOPHYSCIA ORBICULARIS** (Neck.) Moberg — Infrequent, this species is known from both carbonate and granitic boulders and bedrock in partly shaded areas. Wilhelm & Lampa 12399.

**PHAEOPHYSCIA PUSILLOIDES** (Zahlbr.) Essl. — Very common, but easily overlooked; it grows on a wide variety of open-grown trees, mostly those of land-

scaped areas and roadsides; we have one specimen from old farm wood. Wilhelm & Hedborn 12410.

**PHAEOPHYSCIA RUBROPULCHRA** (Degel.) Moberg -- Very common, in shaded woods and swamps where it grows on a variety of corticolous substrates; occasionally it is found on rock or among mosses over rock in shaded areas. Armstrong 984.

### **Physcia** (Schreb.) DC.

Thallus esorediate; apothecia common. . . . . *P. stellaris*

Thallus sorediate; apothecia common or not.

Thallus lobes narrow and finely branched; soredia granular. . . . . *P. millegrana*

Thallus lobes broader, not finely divided; soredia fine and powdery.

Tips of lobes hooded, the soralia nearly or quite concealed; long white marginal cilia conspicuous. . . . . *P. adscendens*

Tips of lobes not hooded, the soralia laminal; cilia absent. . . . . *P. americana*

**PHYSCIA ADSCENDENS** (Th. Fr.) H. Oliv. — Common, throughout the county on a wide variety of open-grown trees; it is also found occasionally on boulders in old fields. Lampa & Wilhelm 170c.

**PHYSCIA AMERICANA** G. K. Merr. — Rare, typically corticolous, this species is known locally only from a partly shaded bluff at the Waterfall Glen Forest Preserve, where it was found on dolomitic bedrock. Wilhelm & Lampa 12395.

**PHYSCIA MILLEGRANA** Degel. -- Abundant; with the possible exception of *Candelaria concolor*, this is the most common lichen in the county. It grows on a variety of substrates, though it is rare in shaded woods and in native settings. Armstrong 397.

**PHYSCIA STELLARIS** (L.) Nyl. — Very common, characteristically on the branches and trunks of a wide variety of open-grown trees; it is also known locally from boulders in old fields. A very similar species, *P. aipolia* (Ehrh.) Hampe, is frequent in nearby counties, but all our attempts to turn it up in Du Page have ended in frustration. It is distinguished by the presence of atranorin (K+ yellow) in the medulla; it is also notably larger than *P. stellaris*. Lampa & Wilhelm 170a.

### **Physciella** Essl.

**PHYSCELLEA CHLOANTHA** (Ach.) Essl. — Common, on a wide variety of open-grown trees, where it grows regularly with *Phaeophyscia pusilloides* and *Physcia millegrana*; it is also known from partly shaded dolomitic and granitic erratics. = *Physcia Chloantha* Ach. Wilhelm 12426.

### **Physconia** Poelt

**PHYSCONIA DETERSA** (Nyl.) Poelt — Common, on a wide variety of corticolous substrates, both in open and shaded areas. Wilhelm & Hedborn 12413.

**Placynthium (Ach.) Gray**

**PLACYNTHIUM NIGRUM (Huds.) Gray** — Rare, this species is known locally only from a shaded dolomitic exposure at the Waterfall Glen Forest Preserve. Wilhelm & Lampa 12394.

**Punctelia Krog**

Thallus lacking isidia or soredia; medulla C- . . . . . *P. bolliana*

Thallus with either isidia or soredia; medulla C+ red.

Thallus isidiate. . . . . *P. rudecta*

Thallus sorediate. . . . . *P. subrudecta*

**PUNCTELIA BOLLIANA (Muell. Arg.) Krog** — Frequent, on the trunks and larger branches of older open-grown trees, usually oaks. = *Parmelia bolliana* Muell. Arg. Wilhelm & Hedborn 12408.

**PUNCTELIA RUDECTA (Ach.) Krog** — Occasional to common, on mostly older open-grown trees, both in landscaped areas and in natural wooded settings. = *Parmelia rudecta* Ach.; *P. horneri* Turn. var. *rudecta* (Ach.) Tuck. Wilhelm & Hedborn 12407.

**PUNCTELIA SUBRUDECTA (Nyl.) Krog** — This species, though we have specimens from elsewhere in the Chicago region, is listed from Du Page County solely on the basis of Calkins (1896), who reported it as "Very common everywhere in our territory." = *Parmelia subrudecta* Nyl.; *P. horneri* of Calkins, not (Sm.) Turner.

**Pyxine Fr.**

Soredia laminal in round soralia; lobes typically with a conspicuous patch of dense pruina just in front of the tips; medulla yellow; cortex K- and UV+ bright yellow. . . . . *P. caesiopruinosa*

Soredia in laminal and marginal soralia; lobes usually with a diffuse patch of pruina near the tips; medulla salmon-orange; cortex K+ yellow and UV-. . . . . *P. sorediata*

**PYXINE CAESIOPRUINOSA (Nyl.) Imsh.** — Rare, this species is known locally only from the Morton Arboretum, where it has been seen to grow on *Ulmus americana* and *Crataegus* sp. Wilhelm & Lampa 12402.

**PYXINE SOREDIATA (Ach.) Mont.** — Rare, known only on the basis of a single collection made on *Crataegus* at the Morton Arboretum. Wilhelm & McKnight 14609.

**Usnea Dill. ex Adans.**

**USNEA STRIGOSA (Ach.) A. Eat.** — This species is included solely on the basis of the report by Armstrong (1977), which stated that it grew on a 50-year-old specimen of *Fraxinus pubinervis*; the photograph reported to be this species cannot with certainty be distinguished from *Evernia mesomorpha*. Recently she has informed us that the thallus no longer can be located.

### Xanthoria (Fr.) Th. Fr.

Thallus esorediate. .... *X. polycarpa*  
 Thallus sorediate.

Many lobes exceeding 0.5 mm wide, the soredia in large labriform soralia. *X. fallax*  
 Lobes narrow, up to 0.5 mm wide, the soredia scattered to terminal, but not in regularly  
 labriform soralia. .... *X. candelaria*

**XANTHORIA CANDELARIA (L.) Th. Fr.** — Frequent, on a wide variety of trees growing in park-like areas and along roadsides; it is rare on dolomitic rock along the bluff at the Waterfall Glen Forest Preserve. Wilhelm & Lampa 12393.

**XANTHORIA FALLAX (Hepp) Arn.** — Frequent, perhaps even moreso than the preceding species; it inhabits slightly more shaded situations, though it is found on a wide variety of corticolous substrates. Lampa 45.

**XANTHORIA POLYCARPA (Hoffm.) Rieber** — Rare, this species is known from only three locations in the county, where it was found on open-grown trees in park-like stands. Lampa 49.

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