

Guide to the Lichens of the New York Area—Part 8

G. G. NEARING

Group 8—*continued*

Physcia stellaris. STAR LICHEN

Fairly common on trees and rocks throughout the New York area. The small, but rather conspicuous and dainty rosettes, up to 5 cm. across, lie rather flat, with regularly radiating branches about 1 mm. wide, which are distinctly convex. The central parts become a confused, warty mass. The color of the dull upper surface is whitish or silvery gray to slate, darkening in the center. The under surface is white or pale gray, with small, whitish root-like holdfasts.

Fruits usually many, often very plentiful, as much as 4 mm. in diameter, but most of them commonly less than 2 mm. The flat disk is dark brown or black, often frosted pale gray, the rim pale gray, smooth, toothed or broken. Spores 2-celled, brown, 14 to 24 by 7 to 11 microns.

Physcia stellaris, a well marked though variable lichen can be distinguished by its pale gray color, and the absence of soredia in any form. Smaller than most of the gray Shield Lichens (Groups 5 and 6), it is further distinguished by its dull surface. The puffed Parmelias, especially *P. colpodes*, may resemble it superficially, but all are black or dark brown beneath. *P. centrifuga* and *P. ambigua* both have a distinct yellow tint wholly lacking in *Physcia stellaris*. Most other species of *Physcia* have soredia. Of those which have not, *P. adglutinata* is small, dull, inconspicuous, with very thin tips. *P. tribacia* has many white points on the tips and margins and may have soredia. The only likely confusion is with *P. aipolia*, a mere subspecies, separated by its broader lobes, with an under surface and holdfasts which blacken. Doubtful specimens should be called *P. stellaris*.

Physcia aipolia

Also called *P. stellaris* var. *aipolia*, or included in *P. stellaris*. A subspecies differing but little. The tips tend to widen and raise their thinnish margins slightly, in contrast to the turned-down margins and thick tips of *P. stellaris*. The under surface and holdfasts of *P. aipolia* tend to blacken. Though the name is in use in the

New York area, it is doubtful whether this form deserves to be considered a subspecies or even a variety.

Physcia granulifera. GRANULAR BLISTER LICHEN

Also called *Anaptychia granulifera*. A poorly defined species, to be looked for in the New York area on tree-bark. Probably rare. It resembles somewhat *P. pulverulenta*, but instead of brown is pale gray or white, with whitish, mealy granules near the tips, also with white masses of soredia and tiny prongs scattered over the upper surface. The under surface is pale, with black root-like holdfasts. Fruits are usually frosted white, with spores variously described.

From pale forms of *P. pulverulenta* it can be distinguished by examining a microscopic section, in which the upper surface consists of parallel fungus threads (the characteristic structure of the genus *Anaptychia*) instead of the cellular structure of *Physcia* proper. This can perhaps be seen clearly by an expert microscopist, but there is doubt whether the character follows natural relationships, or whether it has resulted in some specimens being placed with species to which they are not actually related. It is probably in reality a minor variant. *P. granulifera* is mentioned doubtfully here, as unlikely to occur, though it has been found in Pennsylvania.

Physcia caesia. BLUE-GRAY BLISTER LICHEN

Though named a hundred years ago, this species is not well understood. It occurs on cliffs containing lime, also sometimes on trees, resembling *P. stellaris*, though, in place of the central crust, there is a mass of intertangled branches. The upper surface is pale gray, the under surface also pale, sometimes darkening, while the holdfasts are usually dark. The determining character is the presence of compact, nearly hemispherical mounds of pale blue-gray, or occasionally whitish, soredia as much as 5 mm. in diameter, studded along the main branches, where fruits would be expected. Care must be taken not to confuse these with the dots of white pith exposed where snails have eaten the fruits of *P. stellaris*. Soredia are masses of powder which come off as whitish dust on the fingers when handled, while the pith has the substance of white cardboard. Fruits and spores, when present, are like *P. stellaris*.

As *P. stellaris* has no soredia, any lichen resembling it, but having soredia, should be compared with *P. caesia*, also with *P. astroidea* and *P. sorediata*. The substance of *P. caesia* is thinner than *P. sorediata*, the pale gray color considerably brighter. The sorediate masses rest on the center of the branch rather than on its margin, and, most important, the pith, when the surface is scratched away, is white, not yellow. The smaller *P. astroidea* has soredia loosely scattered rather than compact.

Physcia astroidea. SMALLER STAR LICHEN

Found occasionally on trees or rocks, forming much-branched rosettes about 2 or 3 cm. across, with parts less than 1 mm. wide and almost uniformly flat, lying close to the foothold. The color is pale gray or whitish. Toward the center appear loosely clustered granules and soredia. The under surface is white, with many pale, root-like holdfasts, but in var. *hypomela* this surface and its holdfasts blacken.

Fruits up to 1.5 mm. in diameter, black or frosted whitish, with a wavy, narrow, gray rim. Spores 2-celled, brown, 17 to 25 by 7 to 11 microns.

P. astroidea is a difficult subspecies intermediate between the two variable species *P. stellaris* and *P. tribacia*, and is seldom clearly determined, especially because the young rosettes of the two other species abound on the bark where it grows. The presence of soredia, together with its small size and thin texture, separate it from *P. stellaris*, but only the blunt tips, which lie rather flat, separate it from *P. tribacia*, whose tips rise, and divide into lacey points, dusted white. In contrast to *P. caesia*, which besides is almost confined to rocks, the *white* soredia of *P. astroidea* are not massed densely in large clusters, but usually loose aggregations of granules scattered over the vague central crust. It may somewhat resemble the larger *Cetraria aleurites* (Group 5), which however has the tips shiny instead of dull, while the central prongs and granules are without soredia, therefore not dusty.

Physcia tribacia. LACE-TIPPED LICHEN

A tiny species covering large areas everywhere on trees and rocks equally. So small are the parts in some specimens that they

would hardly be thought Papery Lichens until examined closely. Completely developed and fruiting rosettes may often be only 1 cm. or less across, but often the individual rosettes merge in almost uninterrupted masses a meter or more across and 2 or 3 mm. thick. The narrower parts, especially when growing on rocks, may be only 0.1 mm. wide, while on trees the lobes may broaden to 1 mm. or more, but are then commonly shorter than 1 cm. The tips and margins tend to curl away from the foothold, dividing into fine, lacy points dusted white. The upper surface is pale gray, often covered centrally with a minute lacy growth which makes the entire lichen appear white. There are no massed soredia, but only fine dust. The under surface is pure white, and there are spreading, white holdfasts often much in evidence.

Fruits are frequent, up to 2 mm. in diameter, either blackish brown or frosted white, with a pale gray, often crinkled rim. Spores 2-celled, blackish, 16 to 23 by 7 to 10 microns.

Physcia tribacia, though variable, is one of our easy lichens to learn because common everywhere, especially on roadside oaks. Most other Papery Lichens small enough and pale enough to resemble it, do not lift their tips. *P. teretiuscula* has even narrower parts, which cling close to the rock, and smaller spores. *P. astroidea* tends somewhat larger, without the white points on tips and margins, and with mostly blackening holdfasts. *P. tribacia* must not be confused with *Cladonia caespiticia* (Group 13), also plentiful at the bases of trees, a dense mat of flakes, each usually no more than 2 or 3 mm. long, but more than that in breadth, and instead of spreading by trunks and branches, each flake springing individually from the foothold. *Crocynia zonata* (Group 14) should be mentioned also, tiny and flat, marked with concentric zones of whitish tips on dark gray, rosette-like, flaked crusts.

Physcia teretiuscula. SMALL BLISTER LICHEN

Found occasionally on slate and shale, in rosettes usually less than 1 cm. across, the parts closely pressed against the rock, branches dividing to 0.1 mm. and smaller, with slender, pointed tips touching the rock. The central parts pass into a confused tracery with tiny granules and soredia, but all flat and thin, with margins curling down to make the parts convex above, slightly

grooved beneath. Upper surface whitish to pale gray; under surface pale.

Fruits rather frequent, up to 0.5 mm. in diameter, blackish, with a pale rim, which may be smooth or bear granules and soredia. Spores 2-celled, blackish, 11 to 17 by 5 to 9 microns, usually near the minimum.

Physcia teretiuscula, as seen in the New York area, is the smallest of the genus, one of the smallest of Papery Lichens, requiring close examination with a lens to see its parts. Most nearly allied to *P. tribacia*, it differs in lying perfectly flat, with margins curled down, and in the spores, which are commonly smaller than any other local species of *Physcia*. Especially distinctive are the granules and soredia on the fruit-rims, for no similar lichen has them. This species is smaller than *P. Frostii*, with narrower and more pointed parts, and is much more often found bearing its very different fruits. *Crocynia zonata* (Group 14) is often as small, but much darker, and marked with zones of its pale tips. The rarity of *P. teretiuscula* helps to distinguish it from *P. tribacia* and *Crocynia zonata*, both common. The form differs somewhat from that originally named in Europe, but this name seems to be the best one for it.

Physcia hispida. HOOD LICHEN

Also called *P. tenella* or in part *P. ascendens*. Found occasionally on trees and rocks in limestone country, in the form of rosettes about 1 cm. across, which may be so closely crowded that the rosettes are lost in a continuous intertangled mass of indefinite area. Each branch divides into not more than 3 or 4 parts, no more than 1 mm. wide, which may rise 2 or 3 mm. from the foothold. The upper surface is ashy gray, tipped whitish, and with frequent white or blackish hairs, not only along the margins, but sometimes also on the upper surface. These are not different from the root-like holdfasts on the white under surface. The tips slant upward with toothed edges, or are puffed and blistered into lumpy swellings, which burst outward, frequently leaving a thin, hood-like structure. The form known as *P. ascendens* differs only in having the tips dusted lightly with soredia.

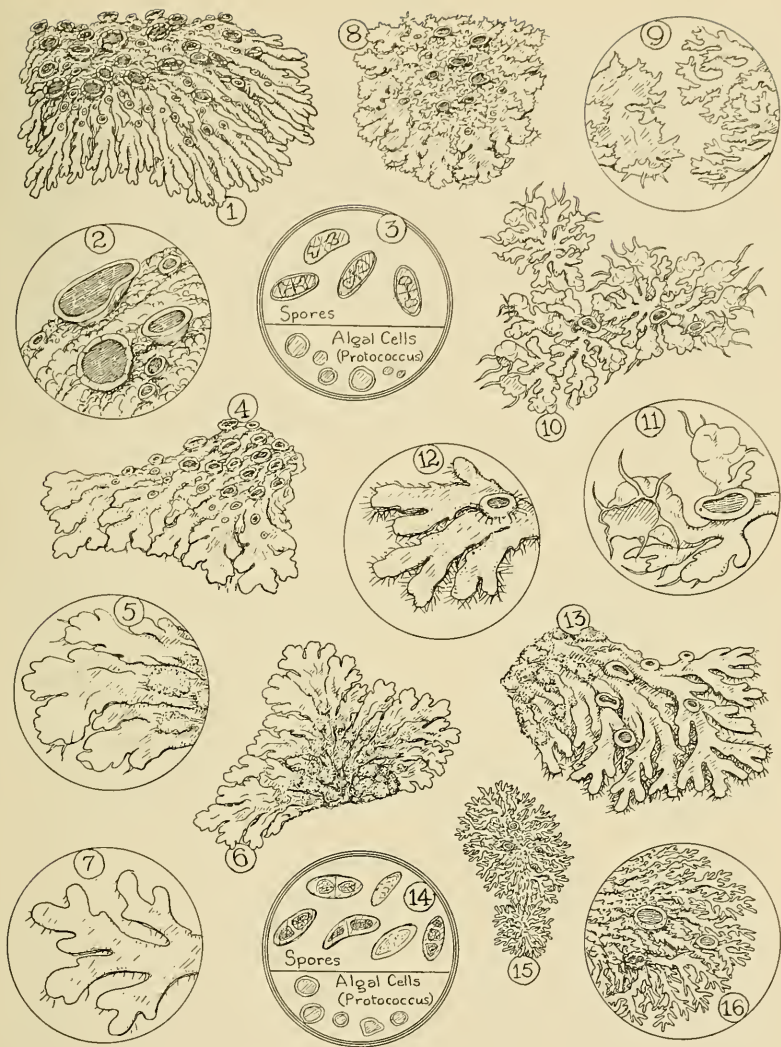


PLATE 12

Fig. 1. *Physcia stellaris*, pale gray.

Fig. 2. *P. stellaris*, fruits.

Fig. 3. *P. stellaris*, spores.

Fig. 4. *P. aipolia*, pale gray.

Fig. 5. *P. caesia*, tips.

Fig. 6. *P. caesia*, pale blue-gray.

Fig. 7. *P. astroidea*, tips.

Fig. 8. *P. tribacia*, gray to whitish.

Fig. 9. *P. tribacia*, various tips.

Fig. 10. *P. hispida*, pale gray.

Fig. 11. *P. hispida*, tips and fruit.

Fig. 12. *P. endochrysea*, tips and fruit.

Fig. 13. *P. endochrysea*, dull drab.

Fig. 14. *P. endochrysea*, spores in various stages.

Fig. 15. *P. teretiuscula*, pale gray.

Fig. 16. *P. teretiuscula*, tips and fruits.

Fruits black, brown or frosted white, up to 2 mm. in diameter, with a smooth or broken, whitish rim. Spores 2-celled, brown, 12 to 22 by 6 to 10 microns.

Physcia hispida can be definitely determined by one glance at the illustration. The puffed and blistered tips, bursting open, have a distinctive character easily recognized. The somewhat similar *P. comosa* (Group 4), with longer hairs, does not burst its tips, but bears bell-shaped fruits there, while the fruits of *P. hispida* occur along the branches, far from the tips. The puffed Parmelias (Group 5) have no hairs above, and are dark beneath, *P. physodes* alone bursting its tips, but in a different manner. No other lichens resemble *Physcia hispida*, unless *P. tenella* and *P. ascendens* are considered separate species.

Physcia obscura. DARK BLISTER LICHEN

Found throughout the New York area on trees and rocks, especially in shaded places. Frequent. Much more common, and differing only in internal color, is *P. endochrysea*, really only a variety of *P. obscura*, but well enough known locally as a species, to justify retaining that rank here. *P. obscura* is white within, *P. endochrysea* bright blood-orange, as shown where scratched or broken, or where eaten by insects, which are particularly fond of herbarium specimens. For description and comparisons, see *P. endochrysea*.

Physcia endochrysea. ORANGE-PITH LICHEN

Also called *P. obscura* var. *endochrysea*. Growing on tree-bark everywhere, also on rocks and over moss in shaded places. One of our most common lichens, but escaping attention because of its dull color. Rosettes usually 3 or 4 cm. across, or running together to cover an indefinite area. The branches and lobes, 1 mm., or at most 2 mm. wide, remain close to the foothold, the central parts often running together in a confused mass, with heaps of pale green or gray soredia, irregularly 1 mm. or so across, or massed into a sorediate crust 2 to 3 mm. thick. There are sometimes also incrustations of blackish granules. The upper surface is dull drab when dry, dusky green when wet, the under surface black, with many black holdfasts, densely spreading, and commonly showing from above as a fringe. The pith is blood-orange.

Fruits brown or black, up to 4 mm. in diameter, with a thick, smooth, drab rim, on the under side of which are often radiating bristles, forming a fringe visible through a very strong lens. Spores 2-celled, brown, 14 to 32 by 7 to 12 microns.

Phycia endochrysea, because so nearly the color of bark or stones, is not often seen unless searched for. When found, a slight scraping with the knife or fingernail reveals the brilliant color of its pith. Since this species is common, scratch any small, dusky rosettes until the orange pith is seen. If exactly similar rosettes but with white pith are later found, these are the less common *P. obscura*. A larger, pale form, also with white pith, but in most other respects similar, is *P. setosa*, another subspecies. A lichen in which the pith is dull yellow, is *P. sorediata*, drab with whitish soredia. The only local Papery Lichen with a pith color to compare with *P. endochrysea*, is the subspecies *P. endococcinea*, a color form of *P. setosa*, having bright orange or orange-buff pith, but usually with this shade showing also under some of the tips, and even on some holdfasts.

Phycia setosa. BRISTLY LICHEN

Found in the northern part of the New York area, and said to be common in parts of New England. As it is only a subspecies of *P. obscura*, with no definite points of distinction, it may be interpreted freely or ignored. It grows somewhat larger, in rosettes up to 10 cm. across, with larger and more luxuriant parts, sometimes decorated with tiny lobes along the branches, when it approaches *P. hypoleuca*, which it resembles in the whitish or ashy color of the upper surface, but contrasts with in being black beneath. The pith is white. A distinguishing feature is the fringe of bristles under the fruit-rim, like that in *P. obscura*, but better developed. Spores tend broader than in *P. obscura*, up to 30 by 17 microns. It is interesting that *P. setosa* may grow intermingled with *Candelaria fibrosa* (Group 9), making a sharp contrast with the lemon-yellow hue of that species, but in structure and size, including the fringe of bristles, the two appear identical, differing only in color and in the spores.

Physcia endococcinea. ORANGE-TIP LICHEN

A subspecies found occasionally on wet rocks, mostly limestone. The name is sometimes considered to be interchangeable with *P. endochrysea*, and the lichen does not greatly differ in essentials, bearing the same relation to *P. setosa* that *P. endochrysea* bears to *P. obscura*. The pith is of nearly the same orange color, which may vary considerably in both lichens, but is always bright. The upper surface is paler, often nearly white. Fruits are usually plentiful. The habit is so much more luxuriant than *P. endochrysea* that it closely resembles *P. hypoleuca*, and further, some of the tips are bare of the normal lower layer of cells, exposing the brilliant pith, at which points the holdfasts also may be orange. Thus *P. endochrysea* is black beneath, *P. endococcinea* black with occasional orange tips, *P. hypoleuca* white. The key to the true relationship of *P. endococcinea* is seen where a few bristles occur under the fruit-rims.

(Group 9 will contain *Candelaria*, *Teloschistes* in part, *Caloplaca* in part.)

Six lichen groups out of a projected 30 groups, have now been published over a period of two years in TORREYA, and the interest in the series expressed by readers has been very gratifying to the author. The writer is considering the completion of the work and bringing it out in book form, amplified to include most of the lichens of the northeastern states. If interested readers who have not already expressed themselves, will write to G. G. Nearing, P. O. Box 338, Ridgewood, N. J., they will be informed when future groups are to be published.

Forty Years of TORREYA

This number completes the fortieth year of publication of TORREYA. At the annual meeting of January 8, 1901, Dr. Britton offered the following resolutions, which apparently were unanimously adopted:

Resolved: That the publication by the Club of a monthly periodical is desirable, to contain short articles and notes with special reference to the study of the local flora, thus covering ground occupied by the Bulletin at its establishment in 1870.