Reinstatement of Lecidea cyrtidia Tuck. in the North American lichen checklist

Richard C. Harris¹

I began this little project with two goals. First to review the application of the name *Lecidea chalybeiza* Nyl., recently taken up in the North American checklist for *Lecidea cyrtidia* Tuck. (Esslinger & Egan, 1995). The second was, having established a correct name, to consider if the species was closely enough related to *Micarea erratica* (Körber) Hertel, Rambold & Pietschmann to warrant its transfer to *Micarea* as well.

For a few years after the publication of Hertel (1977), where *Lecidea* cyrtidia Tuck. (Proc. Amer. Acad. Arts Sci. 12: 181. 1877) was synonymized with *Lecidea chalybeiza* Nyl. (Flora 50: 440. 1867), I used the name *Lecidea chalybeiza*. However, in the mid-1980's I reverted to *Lecidea cyrtidia*, mainly for chauvinistic reasons, but also because Hertel's description did not seem to fit American specimens (epihymenium "schmutzig olivgrün bis grauschwarz" and exciple "olivgrüner bis schwarzgrüner Rindenzone"). Egan (1987) did not pick up Hertel's (1977) synonymization but it was rediscovered by Wong and Brodo (1992) and consequently taken up by Esslinger and Egan (1995). *Lecidea chalybeiza* was assigned with question to synonymy with *Micarea erratica* by Rambold (1989).

The type specimen of *Lecidea chalybeiza* (New Zealand, Otago, ad saxa, ex hb. Jones, H-NYL 20312) consists of three apothecia (no thallus) glued to the packet. One of these had been sectioned previously. With considerable trepidation I removed another thin section from this apothecium. Fortunately the apothecium was in good condition and all the necessary characters were readily ascertainable. The epihymenium and outer exciple are dark green, the inner exciple is paler, streaked with green outward and with brown inward, and the hypothecium is dark brown. The few ascospores seen were 5–6 x 3–3.5 μ m, a little shorter than recorded by Nylander (5–8 x 2.5–3.5 μ m). This same

¹New York Botanical Garden, Bronx, NY 10458-5126

section treated with KOH and modified Lugol's iodine had asci with a distinct dark apical tube. Assuming the thallus is not distinctive, *Lecidea chalybeiza* Nyl. (1867) is clearly a later synonym of *Lecidea erratica* Körber (1861) [= *Micarea erratica* (Körber) Hertel, Rambold & Pietschmann] in the currently accepted sense. (I have not examined the type.)

Lecidea cyrtidia and Micarea erratica have been considered easily confusable (and perhaps closely related) due to similar habitat, somewhat similar aspect, dark hypothecium and small ascospores. Magnusson (1936) and Hertel (1969) seemed to have misnamed Cummings Lich. bor.-am. 212 as L. cyrtidia and Hertel (1977) cited L. cyrtidia as a synonym of L. chalybeiza. My original idea was that the two species being ostensibly so similar, it would be tidier if both species were in the same genus, removing another species from the meaningless puddle, Lecidea s. lat. After examining the lectotype (selected by Hertel, 1975; Missouri, Macon County, 1871, Hall 39, FH), the syntype (Massachusetts, Quincy, 1871, Willey, FH) and 31 specimens at NY, I have concluded that transferring L. cyrtidia to Micarea at this time is unwise. Lecidea cyrtidia is distinctive in uniformly brown pigmentation, paraphyses with swollen tips with a yellow-brown cap, a pale yellowishbrown exciple with a thin dark brown outer layer consisting of radiating hyphae similar to the paraphyses with swollen, brown capped tips, brown pigment granules between the excipular hyphae, hymenium usually sordid yellowish, dark brown hypothecium, ascus with a KI+ apical tube and small ascospores, 6-10 x 2.5-3.5 µm. Micarea erratica has green pigments in epihymenium and exciple, tips of paraphyses not notably swollen, without caps, embedded in the pigmented epihymenial layer, and the excipular hyphae with a thick colorless sheath, hypothecium, asci and ascospores similar to L. cyrtidia. (Magnusson (1936) and Lowe (1939) provided more detailed descriptions.) Lowe (1939) suggested L. cyrtidia is closely related to L. plebeja Nyl. Since I am ignorant regarding the micromorphology of lecanoralean ascus types, I am unable to say if the asci of L. cyrtidia should be considered truly of the Micareatype. This, combined with the differences noted above, leaves me reluctant to transfer L. cyrtidia to Micarea. On the other hand, Micarea erratica was not considered to belong in Micarea by the monographer (Coppins, 1983) and its inclusion represents an expansion of the generic limits. I am somewhat tempted to expand those limits a little more. However, cowardice prevails and *Lecidea cyrtidia* is left lingering in *Lecidea* limbo.

Lecidea cyrtidia is a rather uniform species. The thallus is usually thin, mostly continuous and brown or brownish green, without an obvious prothallus, rare variants have an endolithic thallus, a thicker, discontinuous to areolate thallus (only one collection seen with what I would call a "thick" thallus) or a paler, brownish gray thallus. The apothecia in the types and about half the specimens examined are black, convex, with the margin excluded. In other specimens the apothecia remain flat and have a persistent, slight raised margin. In ca. 20% of the collections the disk is brown and the margin black, with the extreme being a single collection lacking epithecial pigmentation, having a whitish disk. A few of the more southern collections tend to lack the brown pigment granules between the excipular hyphae but since variations from few to none were observed, I attach no significance to this pending further study. Ascospore variation was not studied. Casual attempts, without success, were made to locate pycnidia. Most, perhaps all, collections come from wooded, presumably rather shaded, habitats, on small non-calcareous rocks from naturally eroded banks and mounds or from human disturbed areas along roads and trails. One collection from Kentucky was on shale along a stream where it would have been inundated at high water. Porpidia crustulata (Ach.) Hertel & Knoph is a common associate. I have examined material from Arkansas, northern Georgia, Kentucky, Maryland, Massachusetts, Missouri, North Carolina, northern South Carolina, Tennessee, Virginia and West Virginia. Brodo (pers. comm.) has seen material from southern Quebec and New Brunswick. It is somewhat odd that Lowe (1939) did not find it in his very thorough study in northern New York. The southern boundary at the southern edge of the Appalachians is typical. NY does not have appropriate collections to define the western range limits. Lecidea cvrtidia is reported from Finland (Magnusson, 1936; Hertel, 1969) based on the type of Lecidea lapillicola Vainio. Lowe (1939) doubted this synonymy and based on the American distribution, I think its occurrence in Europe needs to be re-examined. Hertel (1969) suggested that Lecidea micytho Tuck. may also be a synonym of L. cyrtidia. Based on Magnusson's (1936) and Hertel's (1969) descriptions, this seems unlikely. Judging from a couple specimens at NY possibly referable to L. micvtho, it has a distinctive thallus with apothecial characters similar to Micarea erratica and probably should be recognized as a distinct species and transferred to Micarea when the type is restudied.

Micarea erratica in eastern North America often has a well developed, areolate, gray thallus with a black prothallus. When the thallus is poorly developed and the rock is mostly covered with the blackish prothallus, e.g., Cummings Lich. bor.-am. 212, there is some tendency for confusion with the dark brown thallus forms of *L. cyrtidia*. In extreme environments, such as the dwarf pine barrens of New Jersey, the apothecia are borne on a black, dendritic prothallus with only an occasional granule of thallus. My impression is that *M. erratica* prefers open situations, unlike *L. cyrtidia*. The species is well named as it can be found very frequently on non-calcareous glacial erratics and is often the pioneer species on pebbles in old field succession. *Micarea erratica* seems to be more common and more widely distributed than *L. cyrtidia*, with a more northerly range in eastern North America, one collection from California, and is known from Europe and Australia/New Zealand.

Acknowledgments: I thank Don Pfister (FH) and Orvo Vitikainen (H) for the expeditious loan of the types involved.

Literature Cited

- Coppins, B. J. 1983. A taxonomic study of the lichen genus *Micarea* in Europe. Bull. Brit. Mus. (Nat. Hist.) 11(2): 17-214.
- Egan, R. S. 1987. A fifth checklist of the lichen-forming, lichenicolous, and allied fungi of the continental United States and Canada. Bryologist 90: 77–173.
- Esslinger, T. L. & R. S. Egan. 1995. A sixth checklist of the lichenforming, lichenicolous, and allied fungi of the continental United States and Canada. Bryologist 98: 467–549.
- Hertel, H. 1969. Beiträge zur Kenntnis der Flechtenfamilie Lecideaceae II. Herzogia 1: 321–329.

_. 1975. Ein vorläufiger Bestimmungsschlüssel für die kryptothallinen, schwarzfrüchtigen, saxicolen Arten der Sammelgattung *Lecidea* (Lichenes) in der Holarktis. Decheniana 127: 37–78.

- _____. 1977. Gesteinsbewohnende Arten der Sammelgattung Lecidea (Lichenes) aus Zentral-, Ost- und Südasien. Eine erste Übersicht. Khumbu Himal 6(3): 145–378.
- Lowe, J. L. 1939. The genus *Lecidea* in the Adirondack Mountains of New York. Lloydia 2: 225–306.
- Magnusson, A. H. 1936. On saxicolous species of the genus Lecidea proper to North America. Acta Horti Gothob. 10: 1–53.
- Rambold, G. 1989. A monograph of the saxicolous lecideoid lichens of Australia (excl. Tasmania). Biblioth. Lichenol. 34: 3–345.
- Wong, P. Y. & I. M. Brodo. 1992. The lichens of southern Ontario, Canada. Syllogeus 69: 1–79.



Harris, Richard C. 1997. "Reinstatement of Lecidea cyrtidia Tuck. in the North American lichen checklist." *Evansia* 14(3), 69–73. <u>https://doi.org/10.5962/p.346412</u>.

View This Item Online: https://doi.org/10.5962/p.346412 Permalink: https://www.biodiversitylibrary.org/partpdf/346412

Holding Institution New York Botanical Garden, LuEsther T. Mertz Library

Sponsored by New York Botanical Garden, LuEsther T. Mertz Library

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder. Rights Holder: American Bryological and Lichenological Society License: <u>http://creativecommons.org/licenses/by-nc-sa/4.0/</u> Rights: <u>http://biodiversitylibrary.org/permissions</u>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at https://www.biodiversitylibrary.org.