

ERRATUM!

Multiclavula of NL

Andrus Voitk

Photo: Roger Smith

In addition to active Foray Newfoundland & Labrador members, each issue of **OMPHALINA** is sent to past faculty in appreciation of their help. This courtesy has proven valuable over the years, enabling past faculty members to continue contributing after their tour of duty is over. Consider this e-mail from Teuvo Ahti, in response to an article in our last issue, describing a collection of putative *Multiclavula mucida*.¹

My guess, based on your photo, is that your “Multiclavula mucida” might be Multiclavula corynoides instead. My colleague Tea von Bonsdorff supports this identification. M. mucida normally grows on wet rotten wood in shady forests, whereas M. corynoides typically grows on damp, exposed, sandy, roadside soil.

No use keeping you in suspense: Teuvo is right, of course.



Figure 1. Reproduction from Internet of *Clavaria fragilis*, as illustrated in Holmskiöld's book. Lack of wood substrate excludes *M. mucida*. Colour and shape exclude *M. vernalis*, but fit *M. corynoides*, for which it may be an earlier name, awaiting transfer. Compare to Figure 4.

Erroneously, I thought that *M. corynoides* was a western North American species—information I picked up somewhere some years ago, when writing about the other two²—and therefore dismissed it as a possible candidate. Had I checked a bit more thoroughly at the time, I should have learned that *M. corynoides* was first described from the Adirondack Mountains,³ thus very much an eastern species. In fact, current thinking is that it is even more eastern, with the first description coming from Denmark by Holmskiöld in 1790, as *Clavaria fragilis*.⁴ This is interesting, because for some reason the common *Multiclavula* species in Denmark seems to be *M. vernalis*, but Holmskiöld's illustration (Figure 1) leaves no doubt that he did not describe the commoner taxon. Note the similarity of Figure 1 to the photo of *M. corynoides* in the title banner.

Microscopic examination supported Teuvo's identification (Figures 2, 3). Both *M. mucida* and *M. corynoides* have short, squat basidia with 4–6 short sterigmata, but the spores of the latter are longer, as was the case here (8.1 × 3.2 µm, 37 spores, 3

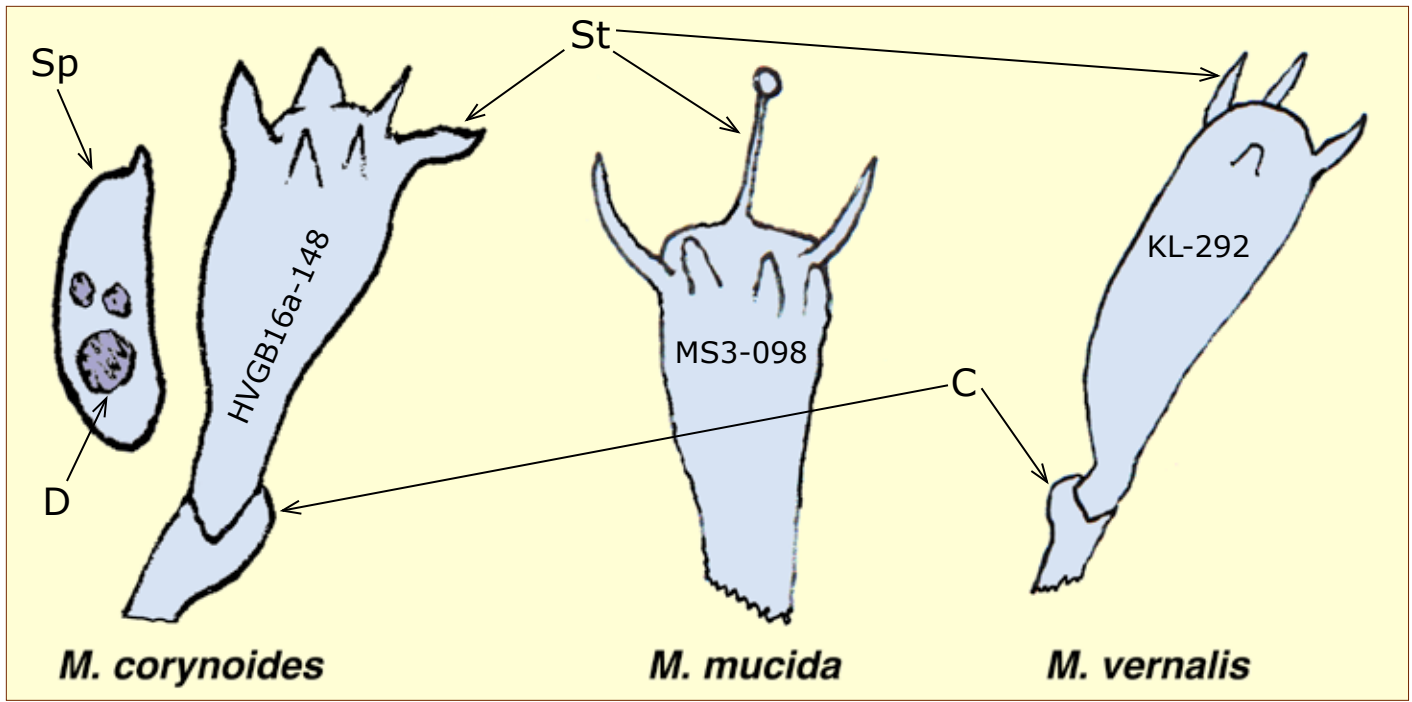


Figure 2. Microscopic appearance of the basidia of our three *Multiclavula* species (not to scale). Sterigmata, the spore-bearing projections (St) numbered 4–6 for two species. Basal clamp connections (C). The number of basidia with sterigmata was very low, only 1–3 per species. Sausage-shaped (allantoid) spore (Sp) with droplets (D) shown for *M. corynoides*; others differ in size only (Figure 3). Numbers are our collection numbers.

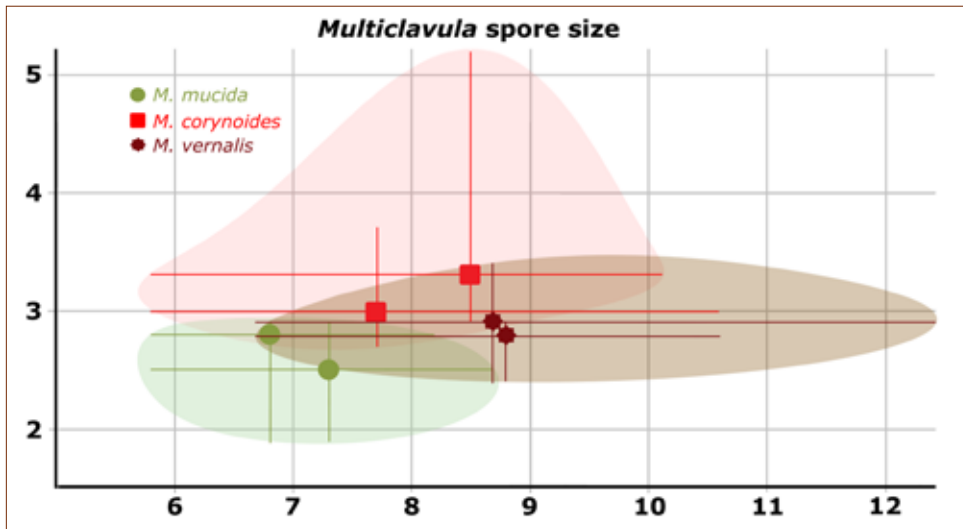


Figure 3. Average spore size and range, as measured from our three species, two collections each. For an accurate average, usually at least 20 spores are needed. Spores were so few, that several sporocarps per collection had to be examined to get that number. There is sufficient overlap, so that a single measurement, possibly even several of a single specimen, may not distinguish them. Fortunately, the differences in substrate and macroscopic appearance are so distinct that microscopy is not required for identification.

sporocarps, 2 collections). Spores were rather scarce, necessitating several examinations to measure enough for a reliable average size. Basidia with sterigmata were even less evident. Scanning hymenial samples from three sporocarps, I found only three basidia with fully developed and inflated sterigmata, one with 4, one with 5, and one with 6. The other two species were no better in this regard (see captions to Figures

2 & 3). Most basidiomycetes have 4-spored basidia. “Supernumerary” sterigmata is a character of chanterelles, so it is not entirely surprising to learn that genus *Multiclavula* belongs in Cantharellales, the same order where chanterelles belong.

The genus *Multiclavula* was erected by Ron Petersen in 1967 for about a dozen similar species associated with alga, moss or liverworts.⁵ Chanterelles, of course, are mycorrhizal, so that photobiont partnership is another similarity common to members of that order.

The foray brings in many collections in a short time, so that identification time is at a premium. Triage—signing off those you think you know, to get them out of the way—may introduce errors, if you mistake similar species, as I did this time. Would we have discovered our error? In this particular case, yes, because Greg Thorn had enough doubts about the identity of these collections that he took some home for sequencing. His molecular



Photo: Roger Smith

Figure 4. *Multiclavula corynoides*. See also title banner. Seemed to be quite common in the HVGB region. Look very much like *M. mucida*, but fruit on wet silt and sand, particularly along roadsides. The substrate difference is so obvious (once you know its importance) that no key or further examination is required to differentiate between the two. Micromorphology of its lichen thallus described and illustrated in the previous issue.¹



Figure 5. *Multiclavula mucida*. Most common in North America, but not in our province, where it has been reported only from central NL. Described from Europe in 1797.⁶ Fruit in sheltered woods on moist dead wood, usually poplar, but reported also from coniferous wood. The wood is always covered with a heavy mat of lichen thallus, microscopically similar to that described for *M. corynoides* in the last issue.¹



Figure 6. *Multiclavula vernalis*. So far only found in NL on wet pioneer soil in the northern Labrador subtundra region; in Europe relatively common in lower peatlands. Described from North Carolina in 1882.⁷ Differ from the other two by their orange hymenium, clearly distinct from the stem, shorter stature, and a thickened, furrowed apex (see also title banner). Thallus seems less dense than for others, but is otherwise microscopically similar.

studies would have alerted us. Most of the time, though, once identified, species are not re-examined unless they are involved in a later study. The value of keeping specimens—a fungarium—is exactly to have them available for precision by such studies—or even for such reexaminations as this.

This delightful discovery brings to three the species of *Multiclavula* we have identified in our province: *M. corynoides*, *M. mucida*, and *M. vernalis* (Figures 4–6). As you see, sequencing, microscopy, or even a formal key, are not required to tell our three apart. Of the two thin ones, one grows on wood and the other on silicate soil. The third grows on wet soil, is stockier and has a furrowed, yellow-orange hymenium, distinct from the stem. This simplicity of identification may not hold for regions of greater multiclavular diversity.

It is possible that not everything identified with these names the world over is genetically conspecific, and some of the three species may have some regional genetic variation. Should we get time to look into it, and find something of interest, we shall keep you posted.

Acknowledgments

Above all, I thank the sharp eyes of Teuvo Ahti for setting

me on the right path. I thank Teuvo, Ron Petersen and Greg Thorn for reviewing the MS: Ron admitted that he had also come to the same conclusion as Teuvo, and Greg had enough doubts to take samples for molecular confirmation.

References

1. Voitk A: *Multiclavula mucida*. *OMPHALINA* 7(8):20–21. 2016.
2. Voitk A, Ohenoja E: Genus *Multiclavula* in Newfoundland and Labrador. *Fungi* 4(2): 26–27, 30–31. 2011.
3. Peck CH: *Clavaria corynoides*. Annual Report of the New York State Museum of Natural History 31(8):39. 1879.
4. Holmskiöld T: *Clavaria fragilis*. *Beata ruris otia fungidanicis* 1:7 t 2–3. 1790.
5. Petersen RH: Notes on the clavarioid fungi. VII. Redefinition of the *Clavaria vernalis*-*C. mucida* complex. *The American Midland naturalist*, 77:205–221. 1967.
6. Persoon CH: *Commentatio de fungis clavaeformibus*, Wolf, Leipzig (p. 55). 1797.
7. von Schweinitz LD: *Multiclavula vernalis*. *Synopsis Fungorum Carolinae Superioris*. Ed. C. F. Schwaegrichen. *Schriften der naturforschenden Gesellschaft zu Leipzig*, 1:20-132(86). 1882.