***Lophiostoma quadrinucleatum* var. *triseptatum* (Peck) Chesters & Bell – AEB 1219 (= PDD 110461). Created as a new combination in 'Chesters C.G.C. & Bell A. 1970. STUDIES IN THE LOPHIOSTOMATACEAE SACC. Mycological Papers #120, 55 pp., Publ. by the Imperial/Commonwealth Mycological Institute, Kew, Surrey, England.'.**

Index Fungorum records it as follows: (accessed online in Sept. 2021)

Current Name:
Thyridaria triseptata (Peck) M.E. Barr, *N. Amer. Fl.*, Ser. 2 (New York) **13**: 36 (1990)
Synonymy:
Lophiostoma triseptatum Peck, in Ellis & Everhart, *N. Amer. Pyren.* (Newfield): 224 (1892)
Navicella triseptata (Peck) Kuntze, *Revis. gen. pl.* (Leipzig) **3**(3): 500 (1898)
Lophiostoma quadrinucleatum var. triseptatum (Peck) Chesters & A.E. Bell, *Mycol. Pap.* **120**: 36 (1970)

Collection site: below Devil's Tower National Monument, Wyoming, U.S.A., between the prairie dog towns near the road within the Monument and those in the campground nearby

Substrate: dead dry decorticated oak twig

Collection date: 20 July 2013

Collectors and identifiers: Dan Mahoney and Ann Bell

Voucher material: dried herbarium material [AEB 1219 (= PDD 110461)] accompanied by 2 Shear's mounting fluid (SMF) slides (one of which contained all asci & ascospores photographed in 2013 & 2021). Dan's photos and his brief description.

Brief description: **Pseudothecia** subglobose, black, sunken in the decorticated wood with only the upper venter and ostiolar slot emergent. Slot parallel to the grain of the wood. **Pseudoparaphyses** numerous, septate, smooth, branched. **Asci** nearly cylindrical with stipes mostly 25+/- µm long, one ascus measured (132.5 × 12.5 µm). **Ascospores** 8/ascus, arranged uniseriately overlapping to apically biseriate, clavate (apiosporic) when young and remaining clavate to ellipsoid-fusoid at maturity with the narrow end of the spore directed downwards in the asci, end cells apically rounded with the basal cell apex often apiculate, smooth, light brown to brown with the central cells darkest, usually transversely 3-septate although 4- & 5-septate spores were seen, spores slightly indented at the septa, 4-celled spores mostly 16–19 × 6–7 µm (n = 30).

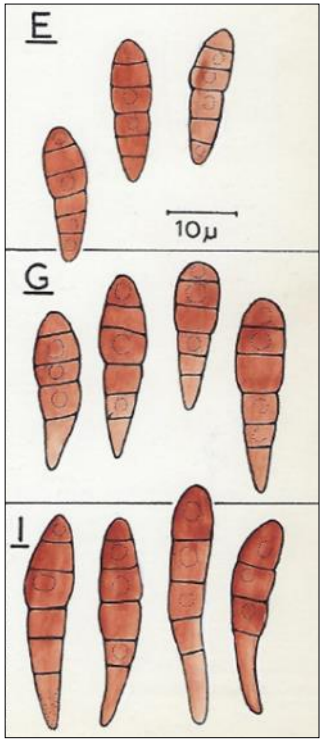
Comments: **1)** See the datastore *L. quadrinucleatum* var. *triseptatum* PDD 90057 pdf for more nomenclature information.

Comments continued:

2) Ascospores in PDD 110461 (= AEB 1219) vary somewhat in shape from those in PDD 90057 (= AEB 963). In AEB 1219 they are often more clavate (apiosporic) when young and often remain so at maturity with the apical cell broader and more rounded and the basal cell smaller and tapering to a narrow or apiculate apex. Other ascospores are shaped much like those in AEB 963 – ellipsoid/fusoid and tapering to rounded apices. Ascospores of both AEB 1219 and AEB 963 are predominantly 4-celled and of similar lengths. Those of AEB 1219 are slightly wider and the septal indentations less obvious. Overall, however, both are reasonable placements in *Lophiostoma quadrinucleatum* var. *triseptatum*.

Ascospores of some species in the *Lophiostoma caulium* group (see 'Chesters C.G.C. & Bell A. 1970. STUDIES IN THE LOPHIOSTOMATACEAE SACC. Mycological Papers #120, 55 pp., Publ. by the Imperial/Commonwealth Mycological Institute, Kew, Surrey, England.') have similarly shaped clavate to apiosporic ascospores. Most species there, however, are regularly 5-celled and often larger. The similarity to AEB 1219 & AEB 963 lies among the smaller-spored variants of *L. caulium* and collections of *L. caudatum*. Ann's partial key to *L. caulium* group species in Mycol. Pap. 120 is reproduced below as are several drawings from her 1966 Ph.D. thesis (E = from a collection of *Lophiostoma caulium* – on *Rumex*, Leg. S.M. Francis, 11-5-1948, IMI. No.111514; Figs G & I, ascospores of *L. caudatum*).

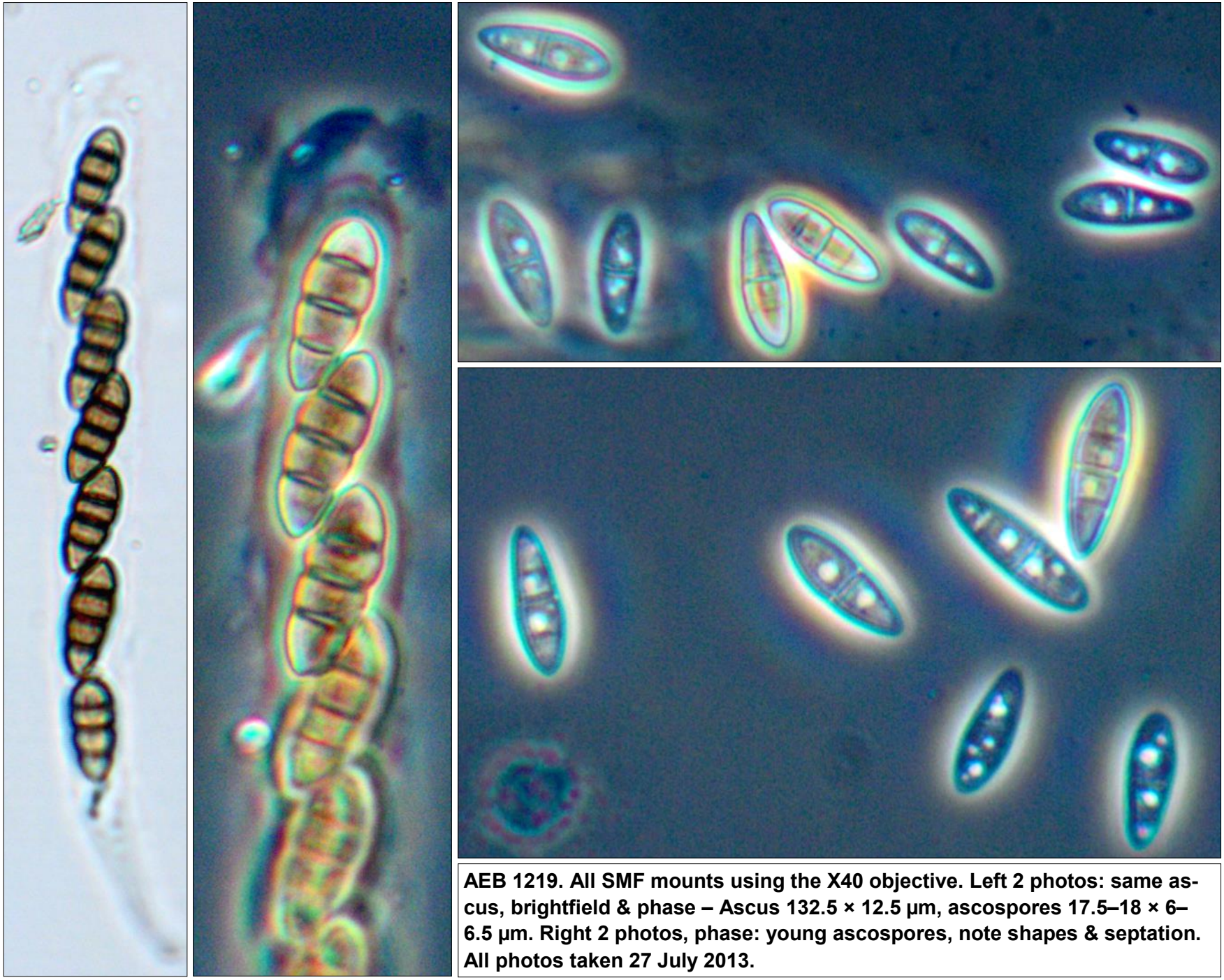
(1) Spores 5-septate, fusiform, 30-40 x 5-8µ, on Phragmites... Lophiostoma arundinis
(1) Spores 5 or 5-7 septate, found on a variety of herbaceous or woody hosts . . (2)
(2) Spores (17)20-30(33) x 4-6µ, 5-7 septate (3)
(2) Spores (24)30-40 x 7-11µ, 5-8 septate (4)
(3) Spores elliptical or fusoid ……..……L. caulium
(3) Spores pyriform or clavate…… L. caudatum



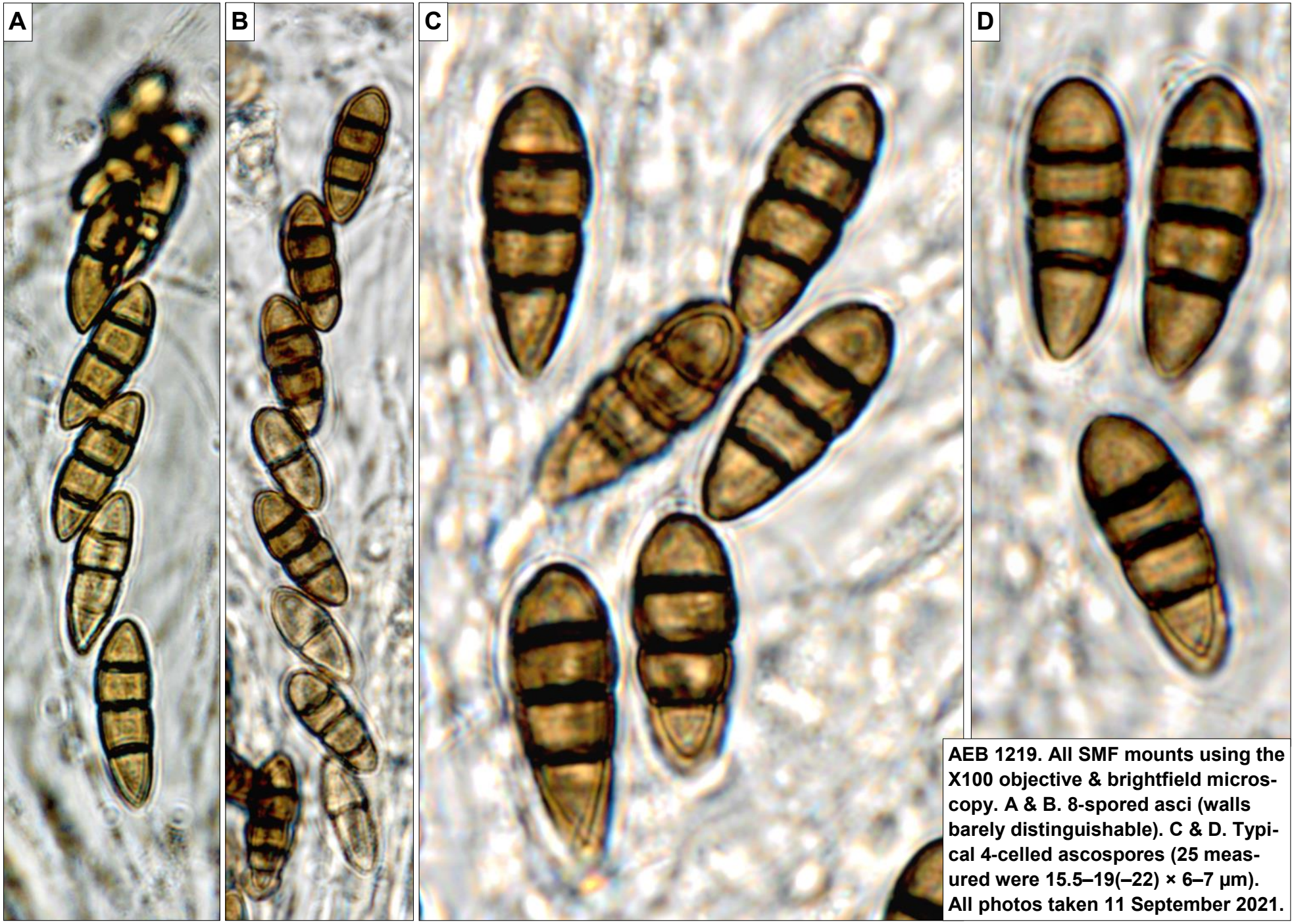
3) More recently, those species included in the portion of Ann's key shown here have been included in the new genus *Sigarispora* Thambugala & K.D. Hyde, gen. nov. (see Thambugala KM, Hyde KD, Tanaka K, Tian Q et al. 2015. Towards a natural classification and backbone tree for Lophiostomataceae, Floricolaceae, and Amorosiaceae fam. nov. Fungal Diversity 74, 199–266). Although these species clump together in their phylogram (p. 207), where they fall – once more collections are represented – remains to be seen. Hopefully, new fresh collections will also include complete morphological descriptions & illustrations (with keys) as well as cultures and ecological records.

AEB 1219. In-situ semi-immersed ascomata with pore to slot-like ostioles. On dead dry oak wood. Photo taken July/August 2013.

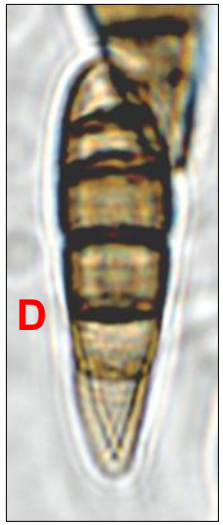
AEB 1219. In-situ semi-immersed ascomata with pore to slot-like ostioles. On dead dry oak wood. Photos taken July/August 2013.



AEB 1219. All SMF mounts using the X40 objective. Left 2 photos: same ascus, brightfield & phase – Ascus 132.5 × 12.5 µm, ascospores 17.5–18 × 6–6.5 µm. Right 2 photos, phase: young ascospores, note shapes & septation. All photos taken 27 July 2013.



AEB 1219. All SMF mounts using the X100 objective & brightfield microscopy. A & B. 8-spored asci (walls barely distinguishable). C & D. Typical 4-celled ascospores (25 measured were 15.5–19(–22) × 6–7 µm). All photos taken 11 September 2021.



AEB 1219. All SMF mounts using the X100 objective & brightfield microscopy.
A & B. 5-celled asco-spore variation.
A) 19 × 7 µm
B) 19 × 6.5 µm
C & D. 6-celled asco-spore variation.
C. 22 × 7 µm
D. 24 × 6.5 µm