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Neotypification of *Lulworthia fucicola*

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Abstract: There are no herbarium specimens or culture material for the type of *Lulworthia fucicola* G.K. Sutherl. With the absence of original material, and to preserve current usage of the name, a neotype is designated hereby. The neotype chosen for *L. fucicola* is a specimen from Chile.

Key words: Lulworthiaceae, Lulworthiales, marine fungi, typification

The genus *Lulworthia* was established by Sutherland in 1916 to accommodate the type species *Lulworthia fucicola* G.K. Sutherl., a scolecosporous ascomycete found on living thalli of *Fucus vesiculosus* at Lulworth on the coast of Dorset, UK. Initially monotypic, *Lulworthia* became one of the largest genera of marine ascomycetes. The genus originally was placed in the Halosphaeriaceae, Halosphaeriales, but based on molecular data a new family and order were described to accommodate halosphaerialean species with filamentous ascospores and *Lulworthia* thus was moved into the Lulworthiaceae, Lulworthiales (Kohlmeyer et al 2000).

The genus *Lulworthia* has been in need of revision for many years (Kohlmeyer 1972, Kohlmeyer and Kohlmeyer 1979, Koch and Jones 1984, Schaufmann et al 1986). Johnson and Sparrow (1961) recognized 12 species; Cavaliere and Johnson (1966) reduced all species to synonymy with *L. medusa* (Ellis et Everh.) Cribb et J.W. Cribb; Kohlmeyer (1972) recognized at least three species; and Koch and Jones (1984) recognized six species. There are currently 11 accepted species and a number of other taxa whose morphological differences are not sufficiently pronounced to allow distinction (Kohlmeyer et al 2000). Molecular studies have been undertaken to determine the phylogeny of *Lulworthia* and other included species in the Lulworthiales (Spatofora et

al 1998, Kohlmeyer et al 2000, Campbell et al 2002, Inderbitzin et al 2004, Harvey 2004), but this effort has been hampered by the lack of herbarium specimens and cultures for the type species of *Lulworthia*.

Since the original description, *L. fucicola* has been collected frequently from submerged wood (e.g., Kohlmeyer and Kohlmeyer 1979, Jones 1985, Shearer and Burgos 1987, Kohlmeyer and Volkman-Kohlmeyer 1991, Yusoff et al 1995, Koch and Petersen 1996) but never from the original algal substrate. Kohlmeyer et al (2000) noted that the lignicolous species is not identical to the algicolous species: Sutherland (1916) described the ascomata of the algicolous type species as carbonaceous with hyaline bases and with no neck, whereas the ascomata of the lignicolous species are thin-walled, dark, with long necks (Kohlmeyer et al 2000). These morphological differences, however, are possibly substratum induced. None of Sutherland's collections of *L. fucicola* have survived and, as the type species of the genus, it is desirable to designate a neotype (Kohlmeyer et al 2000). Kohlmeyer et al (2000) suggested that until *L. fucicola* was collected again from *Fucus* or other algae that Sutherland's illustrations (Sutherland 1916, Figs. 4–7) should serve as the type. However the continued use of *L. fucicola* without the availability of a type specimen is a source of instability for future studies on *Lulworthia*.

Kohlmeyer et al (2000) checked the herbaria of IMI and K, and I have checked the culture collections and herbaria at ATCC, WDCM, Japan Collection of Microorganisms, CBS, Matsushima Mycological Memoirs, BCCM, and CABRI and found no records of any collections of algicolous *L. fucicola*. In addition, extensive collections of algae-inhabiting fungi by Jan Kohlmeyer in Europe and North America and Jørgen Koch in Denmark did not yield any *L. fucicola* (Kohlmeyer et al 2000). Furthermore, environmental sampling by Zuccaro et al (2003) failed to isolate any species of *Lulworthia* from *Fucus*. Given that there have been no collections of algicolous *L. fucicola* since the original collection by Sutherland in 1916, and that the morphological differences are likely to be substratum induced, and in accordance with the International

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Code of Botanical Nomenclature, in which Article 9.6 states that "A neotype is a specimen or illustration selected to serve as nomenclatural type as long as all of the material on which the name of the taxon was based is missing," I am neotypifying this species with a specimen on submerged wood collected in Chile by C.A. Shearer in 1984 (Shearer and Burgos 1987). This specimen was chosen as the neotype because it fits the description of *L. fucicola* as emended by Kohlmeyer and Kohlmeyer (1979) and has cultures and voucher specimens deposited in public collections. Cultures are deposited at the American Type Culture Collection (ATCC 64288) and the Department of Plant Biology, University of Illinois Fungus Collection (C52-1). Voucher specimens are deposited at the New York Botanical Garden (NY). The species description was emended previously by Kohlmeyer and Kohlmeyer (1979), based on numerous collections of material isolated from wood (Barghoorn 1944; Meyers 1957; Johnson and Sparrow 1961; Jones 1963, 1968, 1971, 1972; Kohlmeyer 1963; Kirk 1966; Hughes 1969; Jones and Irvine 1971; Kohlmeyer 1972; Koch 1974; Schmidt 1974).

Lulworthia fucicola G.K. Sutherl., Trans. Br. Mycol. Soc. 5:259. 1916.

= *Halophiobolus cylindricus* Linder in Barghoorn and Linder, Farlowia 1:416. 1944.

= *Lulworthia cylindrica* (Linder) Cribb et J.W. Cribb, Univ. Queensl. Pap., Dep. Bot. 3:79. 1955.

NEOTYPE (designated here) Chile: 10 km south of Punta Arenas, on submerged wood, 25 Jan 1985, C.A. Shearer, C52-1. (NY)

Ascomata globose, dark brown with a long neck up to 154 μm . *Ascospores* filiform, aseptate with apical chambers, (66)77–110(121) \times 4–6 μm , $n = 26$.

Cultures. Isolates obtained from the neotype are stored at ATCC (64288) and the Department of Plant Biology, University of Illinois Fungus Collection (C52-1).

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LITERATURE CITED

Barghoorn ES. 1944. Biological aspects. Farlowia 1:434–467. Campbell J, Shearer CA, Mitchell JI, Eaton RA. 2002. *Cor-*

ollospora revisited: a molecular approach. In: Hyde KD, ed. Fungi in Marine Environments. Hong Kong: Fungal Diversity Press.

Cavaliere AR, Johnson TW Jr. 1966. Marine Ascomycetes: ascocarp morphology and its application to taxonomy. III. A revision of the genus *Lulworthia* Sutherland. Nova Hedwigia 10:425–437.

Harvey JBJ. 2004. Phylogenetic studies of the marine brown algae *Cystoseira* and *Halidrys* including co-evolution with the associated fungal endophyte *Haloguignardia irritans*. *Dissertation Abstracts International* 65(5). Proquest Information and Learning, Ann Arbor, MI, 48103.

Hughes GC. 1969. Marine fungi from British Columbia: occurrence and distribution of lignicolous species. *Syesis* 2:121–140.

Inderbitzin P, Lim SR, Volkmann-Kohlmeyer B, Kohlmeyer J. 2004. The phylogenetic position of *Spathulospora* based on DNA sequences from dried herbarium material. *Mycological Research* 108:737–748.

Johnson T, Sparrow F. 1961. Fungi in Oceans and Estuaries. New York, Weinheim: J. Cramer. 668 p.

Jones EBG. 1963. Marine fungi II. Ascomycetes and Deuteromycetes from submerged wood and drift *Spartina*. *Trans Br Mycol Soc* 46:135–144.

———. 1968. The distribution of marine fungi on wood submerged in the sea. In: Walters AH, Elphick JJ, eds. *Biodeterioration of materials*. Amsterdam: Elsevier. p 460–485.

———. 1971. The ecology and rotting ability of marine fungi. In: Jones EBG, Eltringham SK, eds. *Marine borers, fungi and fouling organisms of wood*. Paris: Organ. Econ. Coop. Dev. p 237–258.

———. 1972. The decay of timber in aquatic environments. *Br Wood Pres Assoc Annu Conv* 1–18.

———. 1985. Wood-inhabiting marine fungi from San Juan Island, with special reference to ascospore appendages. *Bot J Linn Soc* 91:219–231.

———, Irvine J. 1971. The role of fungi in the deterioration of wood in the sea. *J Inst Wood Sci* 29:31–40.

Kirk PW. 1966. Morphogenesis and microscopic cytochemistry of marine pyrenomycete ascospores. *Nova Hedwigia* 22:1–128.

Koch J. 1974. Marine fungi on driftwood from the west coast of Jutland, Denmark. *Friesia* 10:209–250.

———, Jones EBG. 1984. *Lulworthia lignoarenaria*, a new marine pyrenomycete from coastal sands. *Mycotaxon* 20:389–395.

———, Petersen KRL. 1996. A check list of higher marine fungi on wood from Danish coasts. *Mycotaxon* 60:397–414.

Kohlmeyer J. 1963. Fungi marini novi vel critici. *Nova Hedwigia* 6:297–329.

———. 1972. A revision of Halosphaeriaceae. *Can J Bot* 50: 1951–1963.

———, Kohlmeyer E. 1979. *Marine mycology: the higher fungi*. New York: Academic Press. 690 p.

- , Spatafora JW, Volkmann-Kohlmeyer B. 2000. Lulworthiales, a new order of marine Ascomycota. *Mycologia* 92:453–458.
- , Volkmann-Kohlmeyer B. 1991. Illustrated key to the filamentous higher marine fungi. *Bot Mar* 34:1–61.
- Meyers SP. 1957. Taxonomy of marine Pyrenomycetes. *Mycologia* 49:475–528.
- Schaumann K, Mulach W, Molitoris HP. 1986. Comparative studies on growth and exoenzyme production of different *Lulworthia* isolates. In: Moss ST, ed. *The Biology of Marine Fungi*. Cambridge University Press.
- Schmidt I. 1974. Höhere Meerespilze der Ostsee. *Biol Rdsch* 12:96–112.
- Shearer CA, Burgos J. 1987. Lignicolous marine fungi from Chile. *Bot Mar* 30:455–458.
- Spatafora JW, Volkmann-Kohlmeyer B, Kohlmeyer J. 1998. Independent terrestrial origins of the Halosphaeriales (marine Ascomycota). *Am J Bot* 85:1569–1580.
- Sutherland GK. 1916. Additional notes on marine Pyrenomycetes. *Trans Br Mycol Soc* 5:257–263.
- Yusoff M, Jones EBG, Moss ST. 1995. Ascospore ultrastructure in the marine genera *Lulworthia* Sutherland and *Lindra* Wilson. *Cryptog Bot* 5:307–315.
- Zuccaro A, Schulz B, Mitchell JI. 2003. Molecular detection of ascomycetes associated with *Fucus serratus*. *Mycol Res* 107:1451–1466.