

Glioniella clavatispora, sp. nov. from *Avicennia marina* in South Africa

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Accepted for publication 2 December 1996

A new species of *Glioniella* from dead intertidal wood attached to trees of *Avicennia marina* is described. It differs from previously reported *Glioniella* species in having relatively large clavate ascospores.

Key Words—*Glioniella*; mangrove fungi; marine fungi.

The southern most extensive natural stand of mangroves in Africa, consisting exclusively of *Avicennia marina* (Forssk.) Vierh., is found at the Kobonqaba River (Ward and Steinke, 1982). These mangroves occur largely as a narrow fringe along the banks of the river, although the stand on the south bank does include a wide mud flat which is inundated at most high tides. The senior author visited the north bank in November 1990 and the south bank in September 1995 and investigated the intertidal fungi developing on the dead wood attached to *A. marina* trees.

A fungus referred to as “Unidentified ascomycete 2 (Discomycete)” (Steinke and Jones, 1993) had previously been collected on intertidal dead wood of *A. marina* at Beachwood and St Lucia mangroves (S. Africa) in 1991. In subsequent collections at these and other sites further material of this fungus was not found. However, in September 1995, a collection at the Kobonqaba River revealed an abundance of this species.

The fungus has characters similar to those found in species in the genus *Glioniella* Sacc., which has ca 76 described names. None of these species, however, can adequately accommodate “Unidentified ascomycete 2 (Discomycete)” and therefore *Glioniella clavatispora* is described as new here.

Materials and Methods

A comprehensive collection of intertidal dead wood was removed from the living trees of *A. marina*, placed in plastic bags and returned to the laboratory. This material was incubated in plastic boxes and examined for fungi within 14 d. All measurements given were made in seawater. Voucher slides of the fungi identified are held in the senior author’s herbarium. Dried type material is deposited at HKU.

Taxonomy

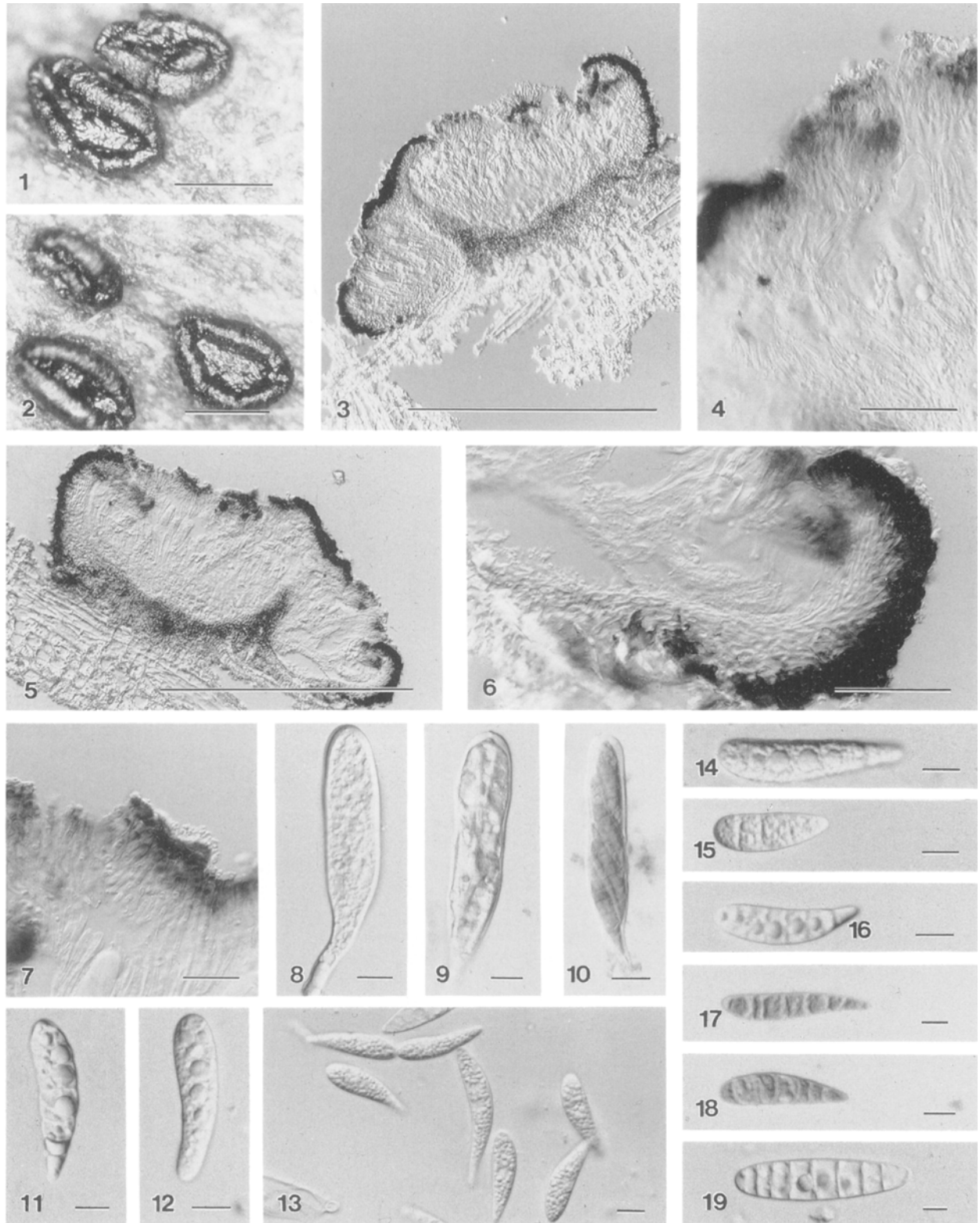
Glioniella clavatispora T. D. Steinke & K. D. Hyde, sp. nov. Figs. 1–19

Ascomata 140–210 μm alta, 364–700 μm diam, elongata, rotundata vel discoidea, complanata, superficialia, membranacea, atro-brunnea, gregaria. Asci 75–90 \times 14–18 μm , 8-spore, clavati, breve pedicellati, bitunicati, fissitunicati. Ascosporeae 18–41 \times 10–11.5 μm , 2–3-seriatae, clavatae, (5–)6(–8)-septatae, hyalinae, laeves.

Holotypus: South Africa: Eastern Province, mangrove near the mouth of the Kobonqaba River (32°36’S, 28°29’E), on intertidal branch of *Avicennia marina* (Forssk.) Vierh., 27 Sep. 1995, T. D. Steinke (PRE).

Ascomata 140–210 μm (\bar{x} = 157 μm , n = 10) high, 364–700 μm (\bar{x} = 539 μm , n = 10) in diam, at first elongate with raised edges, later rounded and/or discoid to cupulate, flat, hysterothecioid, superficial, sessile, seated on the substrate, membranous, dark-brown, gregarious (Figs. 1–4). Excipula composed of thick-walled *textura porrecta*, merging into the basal cushion, forming a *textura angularis*, arching over the hymenium (Fig. 6). Hypothecium composed of thin-walled cells, forming a *textura angularis*, hyaline (Figs. 3, 4, 6). Epithecia dark-brown, crumbling, finally exposing the hymenium (Figs. 5, 7). Base composed of brown, thick-walled *textura angularis*, merging basally with the host substrate (Figs. 3, 4). Pseudoparaphyses 140–210 μm long, 2.5–4 μm in diam, swollen at the tips, rarely branching, septate, hyaline, surpassing the asci (Figs. 5, 7). Asci 75–90 \times 14–18 μm (\bar{x} = 81 \times 16.75 μm , n = 10), 8-spored, clavate, short pedicellate, bitunicate, fissitunicate, apically thick-walled, thinner towards the base, with an apical ocular chamber, no reaction with iodine (Figs. 8–10). Ascospores 18–41 \times 10–11.5 μm (\bar{x} = 36.85 \times 10.15 μm , n = 25), 2–3-seriate, clavate, (5–)6(–8)-septate, hyaline, smooth (Figs. 11–19).

Habitat: Saprobic on intertidal *Avicennia marina*



Figs. 1-19. *Gloniella clavatispora*.

1, 2. Hysterothecia on host surface. 3-7. Sections of hysterothecia illustrating internal arrangement of structures. 8-10. Asci. 11-19. Ascospores. Bars: 1, 2, 1 mm; 3, 4, 100 μm; 5-19, 10 μm.

wood.

Known distribution: South Africa.

Other material examined: South Africa: Beachwood, mouth of Mgeni River (29°48'S, 31°03'E), on intertidal *A. marina*, 5 June 1991, T. D. Steinke; St Lucia Estuary (28°22'S, 32°24'E), on intertidal *A. marina*, 17 April 1991, T. D. Steinke.

The most recent accounts of *Glioniella* were provided by Zogg (1962) who described the type species and five other species, Sivanesan et al. (1988) who described two new species from India, and Pande and Rao (1991) who described a further species from India. In *Glioniella* ascomata are hysterothecoid, asci are bitunicate and ascospores are phragmosporous (see Zogg, 1962; Hanlin, 1990). There are ca. seventy six names in *Glioniella*, although the majority of these were described prior to 1930 (Saccardo, 1882-1957; Sydow and Petrak, 1922; Teng, 1931; Velenovsky, 1934; Doidge, 1941; Kirschstein, 1941; Batista et al., 1955; Zogg, 1962; Joshi and Patwardhan, 1971; Nanir, 1974; Speer, 1986; Sivanesan et al., 1988; Pande and Rao, 1991). Some of these species have since been transferred to other genera (e.g., *G. pinophylla* Höhn.=*Leptopeltella pinophylla* (Höhn.) Sacc. (Saccardo, 1926)), however, most have been untreated since their introduction.

The majority of species described in *Glioniella* have relatively small ascospores (less than 25 µm long) and ca. 40 have ovoid, ellipsoidal or fusiform ascospores with 3 septa. There is probably a large amount of synonymy amongst these species. Only five species, i.e. *Glioniella atramentaria* (Berk. & Broome) Sacc., *G. chinicola* Rehm, *G. microtheca* (Sacc. & Speg.) Sacc., *G. molinae* (De Not.) Sacc. and *G. stenogramma* (Dur. & Mont.) Rehm (Saccardo, 1883, 1891, 1905) are reported to have subclavate or clavate ascospores. In all of these species, however, the ascospores are less than 25 µm long. There are ca. 11 species with relatively long ascospores (e.g., *G. araucana* Speg., *G. bambusae* Zogg), but these have fusiform, lanceolate or acicular ascospores. In *G. clavatispora* the ascospores are relatively long (18–41 µm (\bar{x} = 36.85 µm)) and unmistakably clavate.

Acknowledgements—We thank Helen Leung, A. Southern and A. Y. P. Lee for technical assistance.

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